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1970-71

Canada Year Book

STATISTICAL ANNUAL OF THE
RESOURCES, DEMOGRAPHY,
INSTITUTIONS AND SOCIAL
AND ECONOMIC CONDITIONS
OF CANADA

Published by Authority of the
Minister of Industry, Trade and Commerce

DOMINION BUREAU OF STATISTICS
BUREAU FÉDÉRAL DE LA STATISTIQUE

Frontispiece Photographs

Top —left: Autumn in Gatineau Park, Que.—Malak
right: Parliament Hill in Ottawa, Ont.—George Hunter

Centre —left: Plains of southern Saskatchewan—Malak
right: Flight of Canada Geese—Malak

Bottom—left: Skiing in Banff National Park, Alta.—Malak
right: Ingonish area on the east coast of Cape Breton Highlands National Park, N.S.—Malak

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PREFACE

The 1970-71 edition of the *Canada Year Book* continues a long series of annual publications giving authoritative statistical and other information on many of the measurable phases of Canada's development. The Year Book has, through the years, summarized the statistical data made available by the Dominion Bureau of Statistics and presented it along with legislative and other pertinent information to give concisely, within the covers of one volume, the story of Canada's social and economic progress.

The publication date of the current Year Book was advanced several months so that it covers the eighteen-month period running from April 1969—the date of the 1969 edition—to December 1970. It has thus been possible to include data for two additional years in most chapters although, because of space limitations, in certain cases where figures for a later year reduce the significance of earlier data, the latest year tabulations only are included. It should also be noted that, because the Year Book production process extends over several months, by the time the volume is off the press later data on some subjects may be available from the DBS or the department concerned. Readers in need of the most recent information available or of figures that have been omitted this year should address themselves to the appropriate DBS Division or Government Department, as indicated in the footnotes or in the Directory of Sources of Official Information in Chapter XXVII.

In addition to the normal updating of all subject matter, feature articles or specially prepared chapter material has been included on: "Resource and Economic Development North of the 60th Parallel", pp. 58-64; "The Cabinet Committee System", pp. 79-84; "Trends in Population Growth in Canada with Special Reference to the Decline in Fertility", pp. 213-220; "Provincial Assistance to Artists and Cultural Organizations", pp. 453-456; "Federal Research Advances Canadian Mineral Development", pp. 723-730; "Origin and Destination of Canadian Manufacturers' Shipments", pp. 794-799; "Provincial Assistance to Manufacturing", pp. 804-812; and "Canada's Trade with the Pacific Rim Countries", pp. 1068-1078.

The volume was produced in the Year Book Division of the Dominion Bureau of Statistics by Miss Margaret Pink, Assistant Director and Editor of the Canada Year Book, and the Year Book Division staff under the direction of Pierre Joncas, Director of the Division. The charts and maps, except where otherwise indicated, were prepared by or under the direction of Laurent Tessier of the Drafting Unit. Credits for photographic illustrations used throughout the publication are listed on pp. v and vi.

The co-operation of numerous officials of the various Departments of the Federal and Provincial Governments and of this Bureau in the preparation of material for the Year Book is gratefully acknowledged. Credit by means of footnotes is given where possible either to the persons or to the public service concerned.

Herbert E. Duffett

Dominion Statistician

Dominion Bureau of Statistics
Ottawa, December 1970

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INTERPRETATIVE DATA

In Canada as a rule the Imperial system of weights and measures is followed; an exception is the on where, unless otherwise stated, the short ton of 2,000 pounds is meant.

Relative Weights and Measures, Imperial and United States

The following list of coefficients may be used to translate amounts expressed in one unit to the ther. Where reference is made to Imperial pint, quart and gallon, their equivalent in ounces is also n Imperial measure; likewise United States designations for these quantities are shown in the U.S. equivalent in ounces. The Imperial (or British) fluid ounce and the U.S. fluid ounce are different neasures. One Imperial fluid ounce equals 0.96 U.S. fluid ounce and one Imperial gallon equals 1.2 U.S. gallons.

1 Imperial pint = 20 fluid ounces
1 U.S. pint = 16 fluid ounces
1 Imperial quart = 40 fluid ounces
1 U.S. quart = 32 fluid ounces
1 Imperial gallon = 160 fluid ounces
1 U.S. gallon = 128 fluid ounces
1 Imperial proof gallon = 1.36 U.S. proof gallon

1 short ton = 2,000 pounds
1 long ton = 2,240 pounds
1 barrel crude petroleum = 35 Imperial gallons
1 ounce avoirdupois = 0.91146 ounce troy (oz.t.)
1 statute mile = 5,280 feet
1 nautical mile = 6,080 feet.

Fiscal Years of Federal and Provincial Governments

The fiscal year of the Federal Government and of each of the ten Provincial Governments ends on March 31. Throughout the Year Book, all figures are for calendar years except where otherwise indicated in text or table headings.

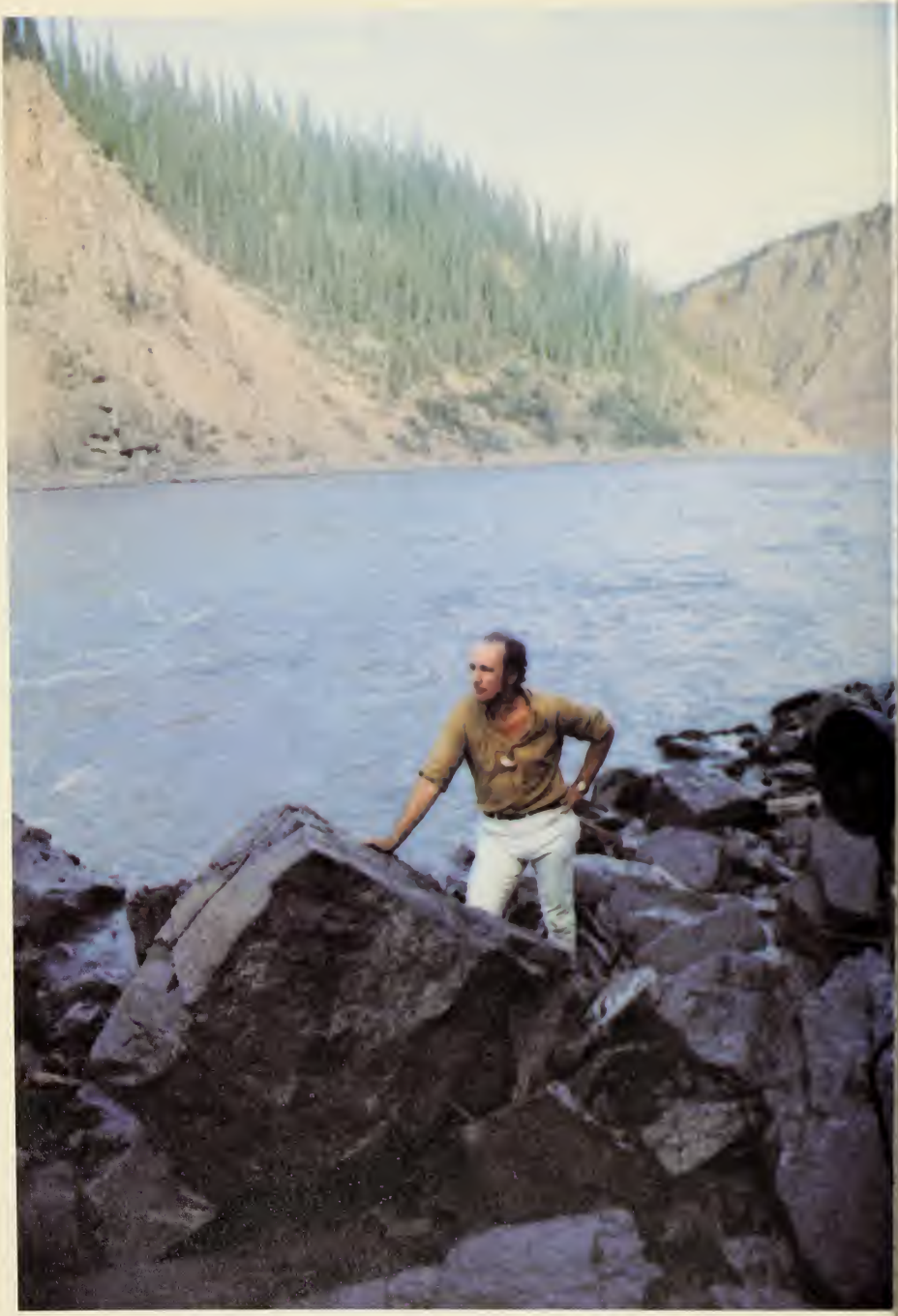
Miscellaneous

Maritime Provinces = Prince Edward Island, Nova Scotia and New Brunswick
Atlantic Provinces = Newfoundland, Prince Edward Island, Nova Scotia and New Brunswick
Central Canada = Quebec and Ontario
Prairie Provinces = Manitoba, Saskatchewan and Alberta
Btu. = British thermal unit (coal)
Mcf. = thousand cubic feet (gas)
n.e.s. = not elsewhere specified.

Symbols

The interpretation of the symbols used in the tables throughout this publication is as follows:—

.. figures not available.
... figures not appropriate or not applicable.
— nil or zero.
-- amount too small to be expressed or where "a trace" is meant.
[p] preliminary figures.
[r] revised figures.



Prime Minister Trudeau contemplates the treacherous waters of the Northwest Territories' famous South Nahanni River, whose racing current carried him downstream in a river scow through miles of canyons in massive towering mountains to its junction with the Liard. This hazardous waterway and the magnificent surrounding country, seemingly cut off from the rest of the world, is steeped in legend and over it hangs an air of mystery that fascinates the adventurer.

CHAPTER I.—PHYSIOGRAPHY AND RELATED SCIENCES

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

Section 1.—Physical Geography

The Canada Year Book as a whole may be said to be a presentation of the geography f the modern state of Canada—cultural, political and economic—as it has developed over ie century since Confederation. Although, as in other advanced societies, rapid urbaniza- on and technological and scientific progress have mitigated the dependence of growth on atural environment and the majority of Canadians are now living and working in a man- ade urban environment, nevertheless the physical features of this vast country, its size, s northern position and its great resources have been basic to the distinctive organization nd productive development that has placed it among the world's most advanced countries, espite its relatively small population. Distance, climate and primary resource occupations ave played a major role in the destinies of its inhabitants.

Canada, occupying the northern half of the North American Continent with the xception of Alaska and Greenland, is the largest country in the Western Hemisphere and ie second largest in the world. The lands within its 3,851,809 sq. miles of territory are xtremely diverse, ranging from the almost semi-tropical areas of the Great Lakes peninsula nd the southwest Pacific Coast, wide fertile prairies and great areas of mountains, rocks nd lakes to seemingly endless stretches of northern wilderness and arctic tundra. The uthernmost point of the country is Middle Island in Lake Erie, at 41° 41′ N. In a straight ie 2,875 miles northward, past the treeline and far into the Arctic, is Cape Columbia on llesmere Island, Canada's northernmost point, at 83° 07′ N. From east to west at the idest point, the straight-line distance is 3,223 miles—from Cape Spear, Newfoundland, 52° 37′ W, to Mount St. Elias, Yukon Territory, at 141°W.

In position, Canada is situated at the crossroads of contact with the principal powers and some of the most populous areas of the world. In the south, it borders on the United States for a distance of 3,986.8 miles. In the north, the Arctic Archipelago penetrates far into the polar basin, making Canada neighbour to northern Europe and the Union of Soviet Socialist Republics. In the east, the salient of Labrador and the Island of Newfoundland commands the shortest crossings of the North Atlantic Ocean and links Canada geographically with Britain and France. In the west, the broad arc of land between Vancouver in southern British Columbia and Whitehorse in Yukon Territory provides departure points for crossings of the North Pacific Ocean between continental North America and the Far East. The length of the Yukon–British Columbia border adjoining Alaska is 1,539.8 miles.

In size, Canada's 3,851,809 sq. miles may be compared with the area of the Soviet Union at 8,649,539 sq. miles,* China (including Taiwan) at 3,705,408 sq. miles,* and Brazil at 3,286,488 sq. miles.* It is more than 40 times the size of Britain and 18 times the size of France. This immense area, which seems to afford extensive scope for settlement, imposes its own burdens and limitations. Much of the land is mountainous and rocky or is under an arctic climate. The developed portion is probably not more than one third of the total; the occupied farm land is less than 8 p.c. and the productive forest land 27 p.c. of the total. The population, estimated at 21,377,000 as at June 1, 1970, may be compared with 201,152,000† for the United States (1968) and with 88,209,000† for Brazil (1968).

Most of Canada's population lives in a corridor one to two hundred miles in width along the whole extent of the southern border. Northward, within the next two to three hundred miles, there are isolated centres established primarily for the extraction of minerals, timber or power and beyond are only the outposts of the northern territories. Thus, size and distance have permeated the lives and background of Canadians, forcing their efforts toward the solving of major problems of transportation and communication and of problems created by the existence of regions with different cultural characteristics and with different resources, culminating in divergent levels of economic progress.

The geographical knowledge of Canada is reasonably complete considering its size and its large areas of difficult access. The whole country has been surveyed and mapped at a scale of 1:250,000, which is very close to four miles to the inch, allowing a detailed depiction of relief, river systems, transportation facilities, forest cover and centres of population. Comparisons of different features and areas can be made, as all sheets of the series are drawn to the same specifications. In addition, all settled areas and regions of northern development have been mapped at larger scales, in particular at 1:50,000 or approximately one and a quarter inches to the mile, and vertical air photographs showing still more detailed depiction of the terrain are available for the whole country, varying in scale from about one inch to the mile in the Arctic to four inches, or larger, to the mile in settled areas. Details of Federal Government surveying and mapping services are given in Section 3.

Politically, Canada is divided into ten provinces and two territories.‡ Each province is sovereign in its own sphere and administers its own natural resources and upon such resources, as related to topography, position and climate, is based the economy of the province. The resources (except for game) of the Yukon and Northwest Territories, because of their remoteness, the great extent and the meagre and scattered population of these areas, are administered by the Federal Government. The land and freshwater areas of the provinces and territories are given in Table 1.

The mileages in Table 2 are another indication of the size of Canada. They show the length of transportation facilities required between the larger cities, between outlying industrial communities built up around large mining or smelting projects and the nearest cities, and between northern outposts and the supplying cities.

* *United Nations Statistical Yearbook, 1968.*

† *United Nations Population and Vital Statistics Report, January 1970.*

‡ The economic development of the country as a whole has formed regions quite distinct from the political divisions; these are described in an article appearing in the 1962 Year Book at pp. 17-23.

1.—Approximate Land and Freshwater Areas, by Province or Territory

NOTE.—A classification of land area as agricultural, forested, etc., is given in Chapter X on Land Use and Renewable Resource Development and total area by tenure on p. 37.

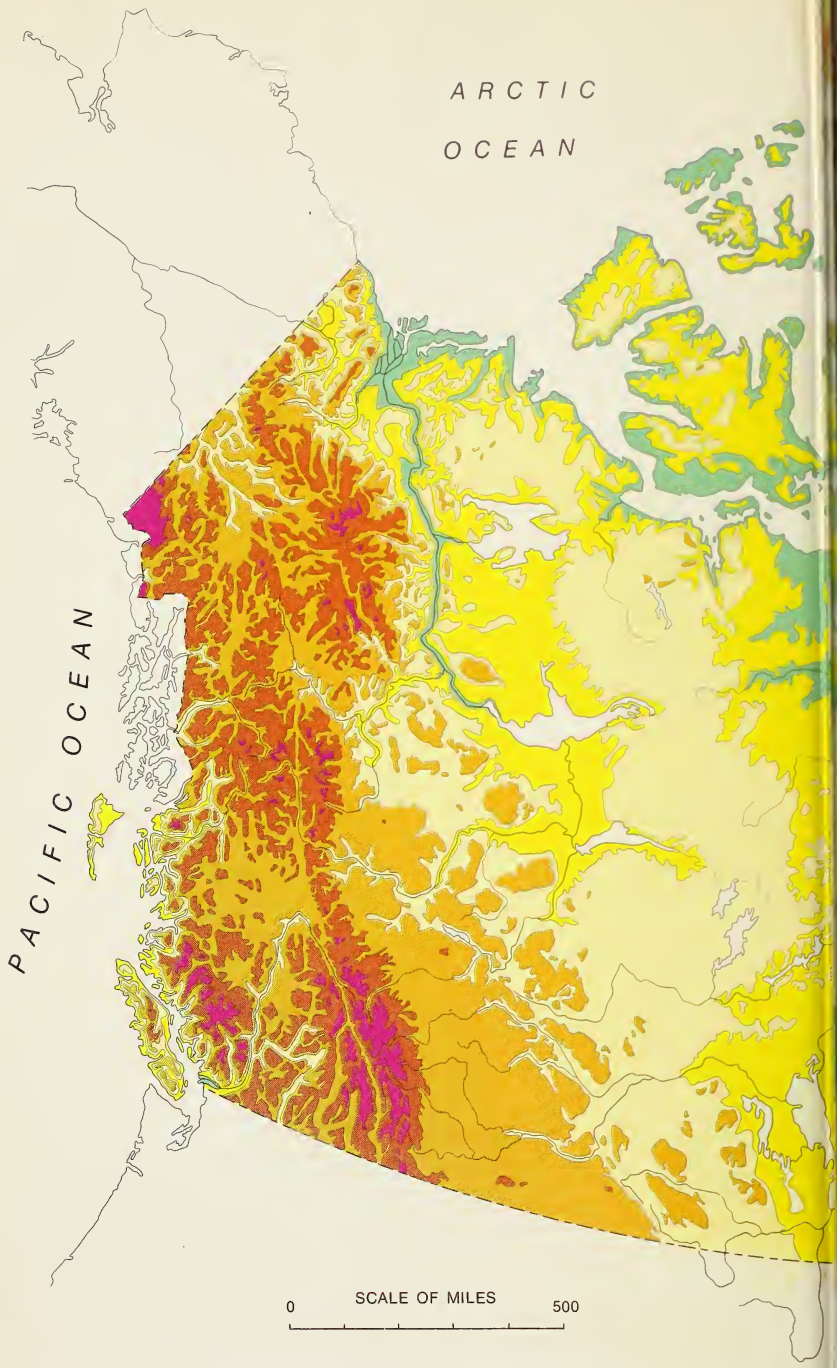
Province or Territory	Land	Freshwater	Total	Percentage of Total Area
	sq. miles	sq. miles	sq. miles	
ewfoundland	143,045	13,140	156,185	4.1
Island of Newfoundland	*41,164*	*2,195*	*43,359*	*1.1*
Labrador	*101,881*	*10,945*	*112,826*	*3.0*
ince Edward Island	2,184	—	2,184	0.1
ova Scotia	20,402	1,023	21,425	0.6
ew Brunswick	27,835	519	28,354	0.7
uebec	523,860	71,000	594,860	15.4
ntario	344,092	68,490	412,582	10.7
anitoba	211,775	39,225	251,000	6.5
skatchewan	220,182	31,518	251,700	6.5
berta	248,800	6,485	255,285	6.6
itish Columbia	359,279	6,976	366,255	9.5
ukon Territory	205,346	1,730	207,076	5.4
orthwest Territories	1,253,438	51,465	1,304,903	33.9
Franklin	*541,753*	*7,500*	*549,253*	*14.3*
Keewatin	*218,460*	*9,700*	*228,160*	*5.9*
Mackenzie	*493,225*	*34,265*	*527,490*	*13.7*
Canada	**3,560,238**	**291,571**	**3,851,809**	**100.0**

2.—Travel Distances between Certain Cities and Other Points of Interest in Canada

NOTE.—The dash used in this table indicates that the distance concerned is of no particular interest. In each case the mileage given is for the type of travel most generally used—road (H), rail (R), air (A) or water (W); air mileages are given for most transcontinental distances but mileage by one type of travel may be given in one direction between two points and by another type of travel in the opposite direction. All distances are given in statute miles.

To / From	Halifax	Montreal	Quebec	Ottawa	Toronto	Winnipeg	Edmonton	Vancouver
	miles	miles	miles	miles	miles	miles	miles	miles
t John's, Nfld.	W 611	W 1,201	W 1,041	A 1,098	W 1,538	A 2,006	A 2,626	A 3,111
arlottetown, P.E.I.	H 174	H 784	H 627	A 607	H 1,130	H 2,261	H 3,111	H 3,825
lifax, N.S.	—	H 838	H 681	A 593	H 1,184	A 1,600	A 2,288	A 2,751
edericton, N.B.	H 306	H 532	H 375	A 475	—	—	—	—
int John, N.B.	H 278	H 625	H 465	H 751	H 971	A 1,483	A 2,174	A 2,635
ibougamau, Que.	—	—	R 608	—	—	—	—	—
ontreal, Que.	R 840	—	A 146	A 94	A 315	A 1,129	A 1,845	A 2,287
ebec, Que.	A 402	H 168	—	A 229	A 455	A 1,200	A 1,895	A 2,353
ieefferville, Que.	—	R 357 + W 495	R 357 + W 335	—	—	—	—	—
ot Îles, Que.	—	W 495	W 335	—	—	—	—	—
milton, Ont.	—	H 386	H 543	H 305	H 40	—	—	—
ndon, Ont.	A 884	A 403	A 543	A 314	H 108	A 898	A 1,636	A 2,030
ttawa, Ont.	R 956	H 126	H 294	—	H 265	A 1,049	A 1,513	A 2,207
lbury, Ont.	A 841	A 348	A 447	H 309	H 270	R 970	A 1,512	A 1,944
under Bay, Ont.[1]	—	W 1,215	W 1,375	R 877	W 877	R 419	R 1,214	R 1,892
ronto, Ont.	W 1,368[2]	H 346	H 514	A 226	—	A 941	A 1,671	A 2,078
ndsor, Ont.	A 998	A 509	A 649	A 420	H 226	A 861	A 1,596	A 1,972
urchill, Man.	—	—	—	—	—	R 976	—	—
nn Lake, Man.	—	—	—	—	—	R 709	—	—
nnipeg, Man.	R 2,195	R 1,355	R 1,522	R 1,239	R 1,217	—	R 795	R 1,559
gina, Sask.	A 1,926	R 1,762	A 1,526	R 1,548	R 1,587	R 357	R 486	R 1,117
skatoon, Sask.	A 2,006	A 1,553	A 1,609	A 1,477	A 1,372	R 472	R 323	R 1,087
anium City, Sask.	—	—	—	—	—	—	A 473	A 925
lgary, Alta.	A 2,327	A 1,867	A 1,929	A 1,789	R 2,059	R 833	R 194 / A 154	R 641
monton, Alta.	R 2,990	R 2,150	R 2,317	R 2,034	R 2,012	A 738	—	A 503
rt St. John, B.C.	—	—	—	—	—	—	A 349	R 728
timat, B.C.	—	—	—	—	—	—	—	W 484
nce Rupert, B.C.	—	—	—	—	—	—	R 959	W 549
ncouver, B.C.	R 3,754	R 2,914	R 3,081	R 2,770	R 2,776	A 1,158	A 503	—
ctoria, B.C.	A 2,774	A 2,307	A 2,374	A 2,226	A 2,094	A 1,178	A 535	W 93
wson, Y.T.	—	—	—	—	—	A 1,806	A 1,165	A 1,185
itehorse, Y.T.	—	—	—	A 2,578	—	—	H 1,294	A 923
bisher, N.W.T.	—	A 1,279	—	—	—	—	A 1,698	A 2,225
vik, N.W.T.	—	A 2,596	—	—	—	A 1,763	A 1,228	A 1,369
llowknife, N.W.T.	—	—	—	A 1,927	—	A 1,085	A 633	A 976

[1]Formerly Fort William and Port Arthur which were amalgamated and re-named Jan. 1, 1970. [2]Via the Strait of Canso.



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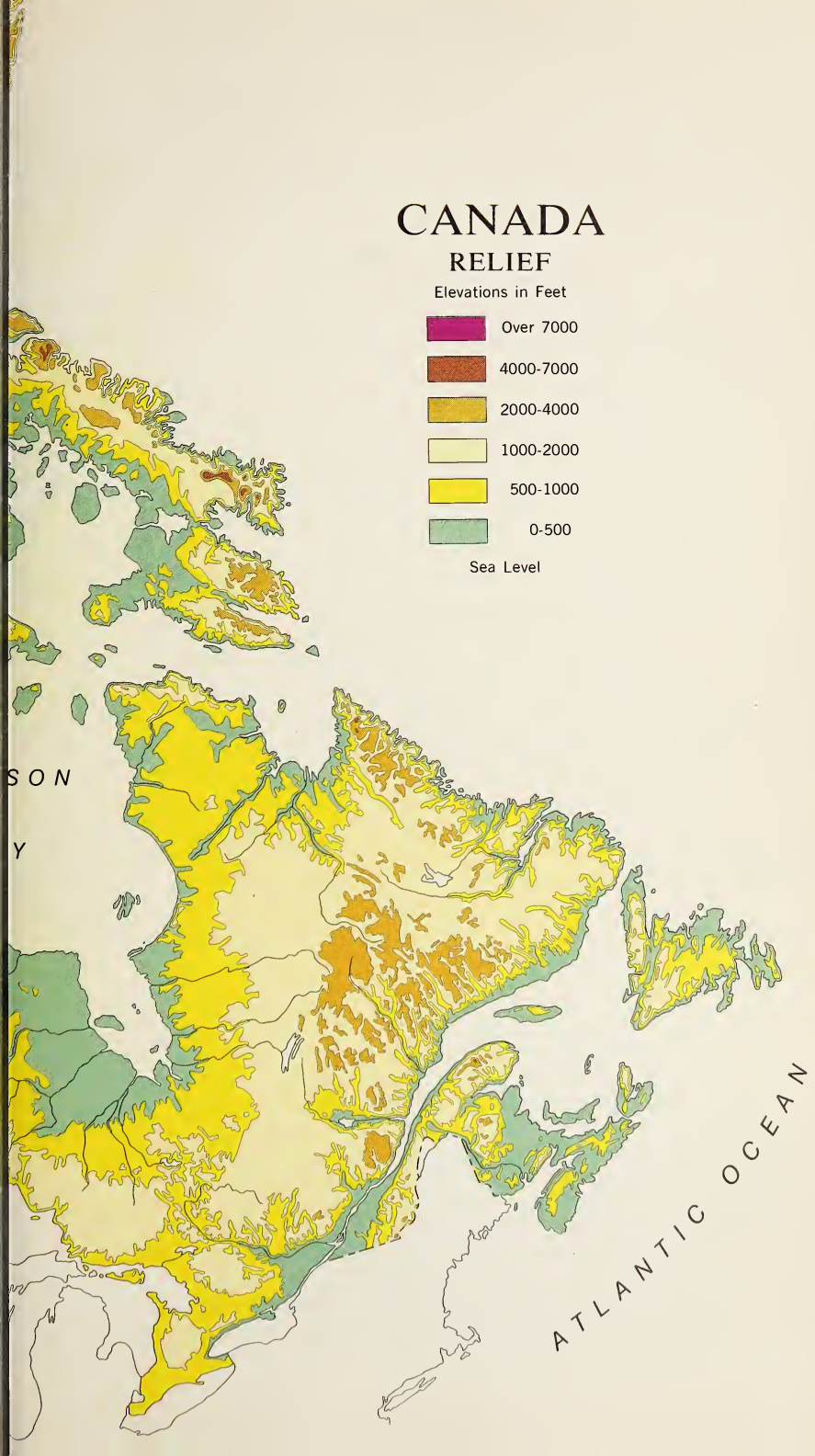
CANADA
RELIEF
Elevations in Feet
Over 7000
4000-7000
2000-4000
1000-2000
500-1000
0-500
Sea Level
SON
Y
ATLANTIC OCEAN

The Canadian Permanent Committee on Geographical Names, administered by the Department of Energy, Mines and Resources, deals with all questions of geographical nomenclature affecting Canada and undertakes research and investigation into the origin and usage of geographical names. The Committee is composed of representatives of the federal mapping agencies and other federal agencies concerned with nomenclature and a representative appointed by each province.

Subsection 1.—Inland Waters

Every year about 8,000,000,000,000 tons of water falls on Canada in the form of rain and snow. Much of it is evaporated but a large amount drains back to the oceans as surface run-off, forming rivers and lakes along its route. This surface water, ceaselessly moving, is the dominant feature of the Canadian environment. It has been estimated, in fact, that about 7.6 p.c. of Canada's total area is covered by fresh water (Table 1). There are probably more lakes here than in any other country in the world—so many that they have never been counted. The total area of fresh water is given as 291,571 sq. miles but this figure does not include most of the small ponds, non-permanent lakes and sloughs, seasonally flooded areas or large areas of marsh and wet tundra. As much as one seventh of all the fresh, liquid, surface water in the world is contained within Canada's boundaries.

A large portion of this water is contained in the Great Lakes. About 37 p.c. of their total area is in Canada, as shown in Table 3. These lakes include some of the largest bodies of fresh water in the world, so large that they have measurable, although very slight, tides.

3.—Elevations, Areas and Depths of the Great Lakes

Lake	Elevation Above IGLD (1955)[1]	Length	Breadth	Maximum Depth	Total Area	Area on Canadian Side of Boundary
	ft.	miles	miles	ft.	sq. miles	sq. miles
Superior (Thunder Bay)	600.38[2]	383	160	1,301	32,483	11,524
Michigan (U.S.A.)	577.24	321	118	923	22,400	—
Huron (Goderich)	577.24[2]	247	101	748	23,860	15,353
St. Clair (Belle River)	572.59[3]	26	24	21	432	270
Erie (Port Colborne)	570.05[2]	241	57	209	9,889	4,912
Ontario (Kingston)	244.27[2]	193	53	775	7,313	3,849

[1] International Great Lakes Datum (1955)=Mean Water Level at Pointe au Père, Que. [2] Ten-year average. [3] Eight-year average.

Other large lakes in Canada, ranging in area from 12,300 to 9,500 sq. miles, are Great Bear Lake, Great Slave Lake and Lake Winnipeg. Apart from these, notable for size, there are countless smaller lakes scattered over the major portion of Canada lying within the Canadian Shield. For example, in an area of 6,094 sq. miles, accurately mapped, south and east of Lake Winnipeg, there are 3,000 lakes; in an area of 5,294 sq. miles southwest of Reindeer Lake in Saskatchewan, there are 7,500 lakes.

Lake storage is very valuable—it represents water that can be drawn upon in time of drought to be replaced in time of plenty. Lakes are natural regulators of river flow. But the true measure of a country's water wealth is the amount of water that can be depended upon to be replaced each year—the amount that remains after evaporation has been subtracted from precipitation. This is the amount that flows in its rivers. Here, too, Canada is very fortunate. The combined mean annual flow of all its rivers has been estimated at 3,500,000 cu. feet per second—about 9 p.c. of the total flow of all the rivers of the world. Set against a population of less than 1 p.c. of the world total, this constitutes a very generous endowment of fresh water.

4.—Elevations and Areas of Principal Lakes, by Province

NOTE.—Areas given are for mean water levels. For those reservoirs and lakes for which two elevations are given, HW means high water and LW low water. All elevations are in feet above mean sea level. "Total" refers to the area of the whole lake; "part" refers to the area within the designated province or territory.

Province and Lake	Elevation	Area
	ft.	sq. miles
Newfoundland—		
Deer	17	24
Gander	82	49
Grand	284	205
Melville	sea level	1,133
Michikamau	1,521	566
Red Indian	520	70
Victoria	932	15
Nova Scotia—		
Bras d'Or	tidal	360
New Brunswick—		
Grand	tidal	65
Quebec—		
Abitibi (total, 369) part	868	56
Albanel	1,289	172
Baskatong (reservoir)	HW 732 / LW 677	109
Bienville	1,400	392
Burnt (Brûlé)	1,590	56
Cabonga (reservoir)	HW 1,185 / LW 1,169	66
Caniapiscau	1,850	210
Champlain (total, 360) part	95	18
Chibougamau	1,253	88
d'Iberville	790	260
Deux Montagnes (des)	73	63
Eau Claire (à l')	790	535
Evans	760	180
Goéland	810	125
Indian House	890	125
Kempt	1,372	75
Kipawa	884	125
Lower Seal	860	130
Manicouagan	645	110
Manouane	1,340	100
Matagami	765	88
Minto	450	485
Mistassini	1,220	840
Nichicum	1,737	150
Olga	785	50
Payne	430	230
Pipmuacan (reservoir)	HW 1,305 / LW 1,275	90
Plétipi	1,660	138
Quinze, des	HW 867 / LW 857	55
Saint-François, River St. Lawrence (total, 88) part	160	63
Saint-Jean	321	414
Saint-Louis	69	57
Saint-Pierre	11	142
Simard	859	73
Témiscaminguc (total, 121) part	HW 589 / LW 575	66
Waswanipi	830	75
Ontario—		
Abitibi (total, 369) part	868	313
Big Trout Lake	697	264
Dog	1,380	61
Eagle	1,192	140
Erie (total, 9,889) part	572	4,912
Huron, including Georgian Bay (total, 23,860) part	580	15,353
Lac la Croix (total, 55) part	1,186	25
Long	1,025	75
Lower Manitou	1,216	60
Mille Lacs, Lac des	1,496	103
Ontario—coneluded		
Minnitaki	1,177	72
Nipigon	855	1,870
Nipissing	643	350
Ontario (total, 7,313) part	245	3,849
Rainy (total, 360) part (reservoir)	HW 1,108 / LW 1,103	291
Red	1,166	71
St. Clair (total, 432) part	575	270
St. Francis, River St. Lawrence (total, 88) part	154	25
St. Joseph	1,226	187
Sandy	904	270
Seul (reservoir)	1,172	539
Simcoe	718	283
Stout (Berens River)	1,035	50
Sturgeon (English River)	1,342	110
Superior (total, 32,483) part	602	11,524
Timagami	965	91
Timiskaming (total, 121) part	HW 589 / LW 575	55
Trout (English River)	1,294	156
Woods, Lake of the (total, 1,695) part (reservoir)	1,060	953
Manitoba—		
Athapapuskow	956	104
Beaverhill	651	70
Cedar	830	517
Clearwater (Atikameg)	855	112
Cormorant	840	174
Cross (Nelson River)	679	274
Dauphin	853	200
Dog	811	64
Gods	585	319
Goose	922	53
Granville	850	181
Island	744	550
Kamuchawie (total, 57) part	1,157	31
Kipahigan (total, 60) part	968	29
Kiskitto	696	65
Kiskittogisu	709	99
Kississing	920	138
Manitoba	814	1,817
Moose	838	525
Namew (total, 80) part	873	8
Northern Indian	760	150
Nueltin (total, 850) part	875	270
Oxford	612	155
Paint	615	54
Pelican (west of Lake Winnipegosis)	838	80
Playgreen	711	257
Red Deer (west of Lake Winnipegosis)	875	100
Reed	915	78
Reindeer (total, 2,467) part	1,150	371
St. Martin	801	125
Setting	737	49
Sipiwesk	601	201
Sisipuk (total, 103) part	919	71
Southern Indian	835	1,060
Swan	850	118
Talbot	845	72
Walker	679	62
Waterhen	829	90
Wekusko	844	64
Winnipeg	713	9,465
Winnipegosis	833	2,103
Woods, Lake of the (total, 1,695) part (reservoir)	1,060	69

4.—Elevations and Areas of Principal Lakes, by Province—concluded

Province and Lake	Elevation	Area
	ft.	sq. miles
Saskatchewan—		
Amisk	964	168
Athabasca (total, 3,120) part	699	2,180
Besnard	1,278	72
Black Birch	1,517	54
Candle	1,621	56
Canoe	1,415	78
Churchill	1,382	213
Cold (total, 138) part	1,756	46
Cree	1,570	446
Cumberland	871	98
Deschambault	1,072	209
Doré	1,506	248
Île à la Crosse	1,380	166
Kamuchawie (total, 57) part	1,157	26
Kipahigan (total, 60) part	966	31
Lac la Loche	1,460	76
Lac la Plonge	1,476	90
Lac la Ronge	1,198	552
Last Mountain	1,606	89
Montreal	1,608	162
Namew (total, 80) part	872	72
Nemeiben	1,259	63
Peter Pond	1,382	302
Pinehouse	1,262	159
Primrose (total, 188) part	1,964	180
Quill	1,703	236
Reindeer (total, 2,467) part	1,150	2,096
Saskatchewan	1,827	171
Sisipuk (total, 103) part	919	32
Smoothstone	1,573	110
Tazin	1,130	156
Wollaston	1,300	796
Alberta—		
Athabasca (total, 3,120) part	699	940
Beaverhill	2,202	80
Buffalo	2,566	56
Calling	1,949	55
Claire	699	545
Cold (total, 138) part	1,756	92
Lac la Biche	1,784	94
Lesser Slave	1,892	461
Mamawi	695	64
Peerless	2,269	75
Primrose (total, 188) part	1,964	8
Sullivan (variable)	2,651	62
Utikuma	2,115	85
British Columbia—		
Adams	1,334	52
Atlin (total, 299) part	2,192	298
Babine	2,332	194
Chilko	3,842	75
British Columbia—concluded		
Eutsuk	2,817	96
François	2,345	91
Harrison	30	87
Kootenay	1,745	168
Kotcho	1,970	31
Lower Arrow	1,370	59
Okanagan	1,123	136
Ootsa	2,666	50
Quesnel	2,380	100
Shuswap	1,142	120
Stuart	2,230	139
Tagish (total, 130) part	2,152	78
Takla	2,260	102
Teslin (total, 142) part	2,250	58
Upper Arrow	1,401	88
Yukon Territory—		
Aishihik	3,001	107
Atlin (total, 299) part	2,192	1
Kluane	2,525	184
Kusawa	2,200	56
Laberge	2,100	87
Tagish (total, 130) part	2,152	52
Teslin (total, 142) part	2,239	84
Northwest Territories—		
Aberdeen	261	475
Artillery	1,190	153
Aylmer	1,230	340
Baker	30	975
Clinton-Colden	1,226	253
Dubawnt	764	1,600
Faber	753	163
Franklin	49	175
Gras, de	1,365	345
Great Bear	511	12,275
Great Slave	513	10,980
Hardisty	643	107
Hottah	640	377
Kaminuriak	320	360
La Martre	870	685
MacKay	1,415	250
Maguse	..	540
Marian	513	90
Nueltin (total, 850) part	875	580
Nutarawit	..	350
Pelly	501	331
Point	1,229	295
Rae	692	74
Schultz	250	110
Thaolintoa	496	160
Yathkyed	461	860

It is understandable that Canada's history of settlement and industrial development has been moulded by the influence of its great rivers. The country's first industry, the fur trade, flourished because of the ready access to the interior provided by the St. Lawrence River, the Great Lakes and their tributary streams and the many other great and small waterways. Early exploration and settlement depended on this same natural means of access. The plentiful water supplies of the flat and fertile plains of southern Ontario and Quebec attracted an industrious farming people. The river-borne transportation of lumber and later the power of water-driven turbines were vital factors in the building of the country's industrial base. Today, more than ever, water is the key to Canada's development, supplying the renewable energy required for industrial growth, providing easy and relatively cheap transport for bulk raw materials and playing a vital part in the processing of those materials.

Table 5 lists the principal rivers of Canada and their tributaries. The tributaries nd sub-tributaries are indicated by indention of names; thus, the Ottawa and other rivers re shown as tributary to the St. Lawrence, and the Gatineau and other rivers as tributary o the Ottawa.

5.—Lengths of Principal Rivers and Their Tributaries

Drainage Basin and River	Length
	miles
Flowing into the Atlantic Ocean	
t. Lawrence (to head of St. Louis, Minn.)	1,900
Ottawa	696
Gatineau	240
du Lièvre	205
Coulonge	135
Madawaska	130
Rouge	115
Mississippi	105
Petawawa	95
South Nation	90
Dumoine	80
North	70
North Nation	60
Saguenay (to head of Peribonca)	475
Peribonca	280
Mistassini	185
Ashuapmuchuan	165
Saint-Maurice	325
Mattawin	100
Manicouagan (to head of Racine de Bouleau)	310
Outardes	270
Bersimis	240
Richelieu	210
St. Francis	165
Chaudière	120
Via the Great Lakes—	
French (to head of Sturgeon)	180
Sturgeon	110
Grand	165
Thames	163
Spanish	153
Trent	150
Mississagi	140
Nipigon (to head of Ombabika)	130
Moira	60
Thessalon	40
aint John	418
omaine	270
atashquan	241
oisie	210
hurchill	208
xploits	153
askaupi	152
anairiktok	139
agle	138
iramichi	135
arguerite	130
ander	102
Flowing into Hudson Bay	
elson (to head of Bow)	1,600
Saskatchewan (to head of Bow)	1,205
South Saskatchewan	865
Red Deer	385
Bow	315
Belly	180
North Saskatchewan	760
Red (to head of Sheyenne)	545
Assiniboine	590
Souris	450
Qu'Appelle	270
Winnipeg (to head of Firesteel)	475
English	330
hurchill	1,000
Beaver	305
oksoak (to head of Caniapiscau)	660
Caniapiscau	575
vern (to head of Black Birch)	610
lbany (to head of Cat)	610

Drainage Basin and River	Length
	miles
Flowing into Hudson Bay—concluded	
Dubawnt	580
Eastmain	510
Fort George (to Nichicum Lake)	480
Attawapiskat	465
Kazan	455
Nottaway (to head of Waswanipi)	400
Waswanipi	190
Nelson (to head of Lake Winnipeg)	400
Rupert	380
Red (to head of Lake Traverse)	355
George (to Hubbard Lake)	345
Moose (to head of Mattagami)	340
Abitibi	340
Mattagami	275
Missinabi	265
Hayes	300
Winisk	295
Whale	270
Harricanaw	250
Great Whale	230
Leaf	165
Flowing into the Pacific Ocean	
Yukon (mouth to outlet of Tagish Lake)	1,587
Yukon (Int. Boundary to head of Nisutlin)	714
Porcupine	448
Pelly	330
Stewart	331
Teslin	215
White	161
Columbia (total)	1,150
Columbia (in Canada)	459
Kootenay (total)	407
Kootenay (in Canada)	276
Fraser	850
Thompson (to head of North Thompson)	304
North Thompson	210
South Thompson (to head of Shuswap)	206
Nechako	287
Stuart (to head of Driftwood)	258
Chilcotin	146
West Road (Blackwater)	141
Skeena	360
Bulkley (to head of Maxam Creek)	160
Stikine	335
Alsek	260
Nass	236
Flowing into the Arctic Ocean	
Mackenzie (to head of Finlay)	2,635
Peace (to head of Finlay)	1,195
Finlay	250
Smoky	245
Little Smoky	185
Parsnip	145
Athabasca	765
Pembina	210
Liard	755
South Nahanni	350
Petitot	295
Fort Nelson	260
Hay	530
Peel (to head of Ogilvie)	425
Arctic Red	310
Slave	258
Twitya	200
Back	605
Coppermine	525
Anderson	430
Horton	275

The following map shows the major drainage basins of Canada. Probably the most important is the Atlantic drainage basin, being dominated by the Great Lakes–St. Lawrence system which drains an area of approximately 678,000 sq. miles and forms an unequalled navigable inland waterway through a region rich in natural and industrial resources. From the head of Lake Superior to Belle Isle at the entrance of the Gulf of St. Lawrence, the distance is 2,280 miles. The entire drainage area to the north of the St. Lawrence and the Great Lakes is occupied by the southern fringe of the Canadian Shield—a rugged, rocky, plateau region over the edge of which tumble many swift-flowing tributary rivers. These rivers, as well as the St. Lawrence itself, provide the electric power necessary to operate the great industries of the area. South of the St. Lawrence, the smaller rivers are important locally. The Saint John, for instance, drains a fertile area and provides most of New Brunswick's hydro power.

The Hudson Bay drainage basin is the largest in area and its main river is the Nelson. The Winnipeg River, a tributary of the Nelson, is completely developed for hydro-electric power but development of the Nelson itself is just beginning. The two branches of the Saskatchewan River, tributary to the Nelson, drain the great agricultural region of the mid-west and are now the sources of important irrigation projects.

The Arctic drainage basin is dominated by the Mackenzie, one of the world's longest vers. It flows 2,635 miles from the head of the Finlay River to the Arctic Ocean and ains an area in the three westernmost provinces of approximately 700,000 sq. miles. xcept for a 16-mile portage in Alberta, barge navigation is possible from the end of steel Waterways on the Athabasca River to the mouth of the Mackenzie, a distance of 1,700 iles.

The rivers of the Pacific basin rise in the mountains of the Cordilleran Region and flow the Pacific Ocean over tortuous, precipitous courses, rushing through steep canyons d tumbling over innumerable falls and rapids. They provide power for large hydro-ectric developments and in season swarm with salmon returning inland to their spawning ounds. The Fraser River rises in the Rocky Mountains and toward its mouth flows rough a rich agricultural area. The Columbia is an international river which has a total ll of 2,650 feet during its course and has thus a tremendous power potential. Although a nsiderable portion of the United States potential has been developed, Canadian develop-ent is relatively slight. The Yukon River is also an international river but, although the rgest on the Pacific slope, is at present relatively unimportant economically.

Subsection 2.—Coastal Waters

The coastline of Canada, one of the longest of any country in the world, comprises e following estimated mileages (statute):—

Mainland—

Atlantic, 6,110; Pacific, 1,580; Hudson Strait, 1,245; Hudson Bay, 3,155; Arctic, 5,770; total, 17,860 miles.

Islands—

Atlantic, 8,680; Pacific, 3,980; Hudson Strait, 60; Hudson Bay, 2,305; Arctic, 26,785; total, 41,810 miles.

A comprehensive description of the coastal waters of Canada would require information om sciences such as oceanography, marine biology and meteorology. However, the basic ctor in any study of the oceanic-continental margin is the physical relief of the sea floor, d the scope of the information presented here is therefore restricted to this and a few lient features of the Atlantic, Pacific and Arctic marginal seas surrounding Canada.

Atlantic.—Along this coastal area, the sea has inundated valleys and lower parts of e Appalachian Mountains as well as those of the Canadian Shield. The submerged conti-ntal shelf, protruding seaward from the shore, effects the transition from continental oceanic conditions. This shelf is distinguished by great width and diversity of relief. om the coast of Nova Scotia its width varies from 60 to 100 miles, from Newfoundland to 120 miles (at the entrance of Hudson Strait), and northward it merges with that of e Arctic Ocean. The outer edge of the shelf, known as the continental shoulder, is of rying depths of from 100 to 200 fathoms before the shelf suddenly gives way to the ep declivity leading to abyssal depths. The over-all gradient of the Atlantic continental elf is slight but the whole area is studded with shoals, plateaux, banks, ridges and islands d the coasts of Nova Scotia and Newfoundland are rugged and fringed with islets and oals. Off Nova Scotia, the 40-fathom line lies at an average of 12 miles from the shore d constitutes the danger line for coastal shipping. The whole floor of the marginal sea ppears to be traversed by channels and gullies cutting well into the shelf.

The main topographical features of the Atlantic marginal sea floor are attributed to acial origin but land erosion is an important factor. Eroded materials are carried sea-ard by rivers, ice and wind, and wave action against cliffs and shore banks washes away ormous masses that are deposited over the surrounding sea floor. The topography of e continental sea floor is therefore constantly changing and navigation charts of Canada's stern seaboard must be continuously revised.

Hudson Bay and Hudson Strait bite deeply into the Continent. Hudson Bay is a inland sea 250,000 sq. miles in area having an average depth of about 70 fathoms; th greatest charted depth in the centre of the Bay is 141 fathoms. Hudson Strait separate Baffin Island from the continental coast and connects Hudson Bay with the Atlantic Ocea It is 430 miles long and from 37 to 120 miles wide and its greatest charted depth of 48 fathoms is close inside the Atlantic entrance. Great irregularities of the sea floor are in dicated but, except in inshore waters, few navigation hazards have been located.

Pacific.—The marginal sea of the Pacific differs strikingly from the other marin zones of Canada. The hydrography of British Columbia is characterized by bold, abrup relief—a repetition of the mountainous landscape. Numerous inlets penetrate the moun tainous coasts for distances of 50 to 75 miles. They are usually a mile or two in width an of considerable depth, with steep canyon-like sides. From the islet-strewn coast, th continental shelf extends from 50 to 100 sea miles to its oceanward limit where depths o about 200 fathoms are found. There the sea floor drops rapidly to the Pacific deep parts of the western slopes of Vancouver Island and the Queen Charlotte Islands lyin only four miles and one mile, respectively, from the edge of the declivity. These gre detached land masses are the dominant features of the Pacific marginal sea. As is to b expected in a region so irregular in hydrographic relief, shoals and pinnacle rocks ar numerous, necessitating cautious navigation.

Arctic.—The submerged plateau extending from the northern coast of North Americ is a major part of the great continental shelf surrounding the Arctic Ocean, on which li all the Arctic islands of Canada, Greenland, and most of the Arctic islands of Europe an Asia. This shelf is most uniformly developed north of Siberia, where it is about 500 mile wide; north of North America it surrounds the western islands of the Archipelago an extends 50 to 300 miles seaward from the outermost islands.

The floor of the submerged part of this continental margin is nearly flat to gentl undulating, with here and there isolated rises or hollows. Most of it has an average slope seaward, of about one half a degree, with an abrupt break at the outer edge, to the conti nental slope whose declinity is commonly six degrees or more. From the Alaskan borde eastward to the mouth of the Mackenzie River the shelf is shallow and continuous with th coastal plain on the mainland; the outer edge of the shelf, or continental shoulder, lies at depth of about 35 fathoms and about 40 nautical miles offshore. This shelf is continuou with that north of Alaska and Siberia. Near the western edge of the Mackenzie Rive delta, the continental shelf is indented by a deep valley (the so-called Herschel Sea Canyon whose head comes within 15 miles of the coast. Between Herschel Sea Canyon and Amund sen Gulf, the typical features of the continental shelf are replaced by the submerged portio of the Mackenzie River delta, which forms a great pock-marked undersea plain, mostl less than 30 fathoms deep, up to 75 nautical miles wide and 250 miles long.

North and east of the submerged portion of Mackenzie River delta, the continenta shelf, while typical in form, is more deeply submerged than that off the mainland an Alaska. Its gently undulating surface is, for the most part, 200 fathoms or more below se level, and the well-defined, nearly straight continental shoulder is mostly more than 30 fathoms deep, giving way to the smooth continental slope which extends without significan interruption to the floor of the abyssal Canada Basin at a depth of about 2,000 fathoms. The deeply submerged continental shelf extends along the entire west coast of the Canadia Arctic Archipelago from Banks Island to Greenland. All of the major channels betwee the islands—Amundsen Gulf, M'Clure Strait, Prince Gustav Adolf Sea, Peary Channe Sverdrup Channel and Nansen Sound—have flattish floors at about the same depth as th shelf and appear to enter it "at grade", although there are a few local irregularities tha may be the result of glacial action. No deep indentations or canyons are known to cut th

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tinental slope or continental shelf off the Archipelago, except one sinuous canyon that ls off Robeson Channel at the northeastern end, close to the coast of Greenland. The merged sides of the channels of the Archipelago, and the slopes from the shoreline at the tern edge of the islands to the inner edge of the deeply submerged shelf, are in many es marked by a series of steps or terraces.

The continental shelf bordering the Arctic Ocean as well as the adjacent mainland, ticularly near the delta of the Mackenzie River, and the islands of the Canadian Arctic hipelago have been subjected to increasingly intensive scientific study and mineral urce exploration during the past 15 years. Co-ordinated and continuing programs of earch and survey have studied the bedrock geology, the development of the terrain, the ments on the sea floor and the nature and history of the icecaps. Gravity, seismic, magnetic, geomagnetic and geothermal investigations have obtained information on physical characteristics and structure of the rocks beneath the surface, and the nature stability of the crust underlying the islands, the continental shelf and the continental e. A complementary program of geodetic, topographic and hydrographic surveys has vided the necessary background maps and charts, and information about both terrestrial marine physiography for these studies. Along with the technical surveys and investiga- s in the physical sciences, there have been less intensive but very relevant studies of the ogy of the Arctic lands and oceans. The result of all these activities is that a great deal eliable scientific information in a wide range of subjects is now available for an area ut which very little was known two decades ago.

Much of this activity has been spurred by geological indications that conditions were urable for the accumulation of petroleum deposits in the thick assemblages of sedi- tary rocks bordering the Arctic Ocean. By 1960, petroleum exploration permits had n filed for essentially all of the land areas of the western Canadian Arctic Coast and hipelago, and it was becoming apparent that the favourable geological conditions tinued under many of the channels between the islands and under almost all of the con- ntal shelf south of Sverdrup Channel. By 1970, exploration permits had been taken ver virtually all of this area, and over a large part of the upper portion of the continental e. A vigorous program of geophysical and geological exploration is being pursued by oil industry and many studies are under way in connection with the engineering and nical problems of development and transport in the arctic environment and ice-covered n. The role of the investigations of the Canadian Government is consequently no ger one of finding potentially favourable areas or of stimulating interest in the resources he region; it is one of providing wise management, of learning enough about the Arctic ironment, both marine and terrestrial, and its processes so that the operations connected n resource development and transport can be as safe and efficient as possible, without ue undesirable effects on the arctic terrain and ocean and its wildlife, and so that the urces of the area can be used to the greatest long-term good of the residents of the area,

particularly the native peoples, and of the people of Canada as a whole. The prese researches and surveys are therefore placing emphasis on charting possible shipping rou for supertankers or cargo submarines; on studying the nature and behaviour of sea i and its effects on vessels and structures; on the problems of prevention and control of pollution in cold and ice-covered waters; and on the problems of constructing harbou townsites, pipelines and overland transportation routes along the Arctic Coast. Study being given to the unique ecosystems that have developed in the Arctic environment a their susceptibility to violent upset by relatively minor human activities. It is being re ized that one of the greatest resources of Canada is its relatively unspoiled Arctic Coast, unpolluted Arctic Ocean, and the present inhospitable but untrammelled free space a natural wildlife of the Arctic lands and oceans. The value of this resource to man, if it not destroyed, will grow with each passing generation as free, open and unpolluted lan and waters become more scarce and more expensive to regain elsewhere in the world. It the aim of the present researches to facilitate the wise use of these present economic r sources without at the same time adversely affecting its permanent value.

Subsection 3.—Islands

The largest islands of Canada are in the North and all experience an arctic climat The northern group extends from the islands in James Bay to Ellesmere Island whi reaches 83°07′N. Those in the District of Franklin lie north of the mainland of Cana and are generally referred to as the Canadian Arctic Archipelago; those in the extren north—lying north of the M'Clure Strait–Viscount Melville Sound–Barrow Strait–Lancast Sound water passage—are known as the Queen Elizabeth Islands.

On the West Coast, Vancouver Island and the Queen Charlotte Islands are the large and the most important but the coastal waters are studded with many small rocky island

The Island of Newfoundland forming part of the Province of Newfoundland, t Province of Prince Edward Island, Cape Breton Island forming part of the Province Nova Scotia, Grand Manan and Campobello Islands forming part of the Province of N Brunswick, and Anticosti Island and the Magdalen group included in the Province Quebec are the largest islands off the East Coast.

Notable islands of the inland waters include Manitoulin Island (1,068 sq. miles area) lying in Lake Huron, the so-called Thirty Thousand Islands of Georgian Bay and t Thousand Islands in the outlet from Lake Ontario into the St. Lawrence River.

6.—Areas of Principal Islands, by Region

Region and Island	Area	Region and Island	Area
	sq. miles		sq. mile
Arctic Archipelago—		**Arctic Archipelago**—continued	
Northern Region (Queen Elizabeth Islands)—		Northern Region—concluded	
		Graham	29
Ellesmere	82,119	North Kent	25
Devon	20,861	Emerald	25
Melville	16,369	Coburg	14
Axel Heiberg	15,779	Little Cornwallis	13
Bathurst	7,609	Baillie Hamilton	11
Prince Patrick	6,081		
Ellef Ringnes	5,139	Southern Region—	
Cornwallis	2,670	Baffin	183,81
Amund Ringnes	2,515	Victoria	81,93
Mackenzie King	1,922	Banks	23,23
Borden	1,344	Prince of Wales	12,83
Cornwall	1,292	Somerset	9,37
Eglinton	551	King William	4,95
King Christian	448	Bylot	4,20
Lougheed	413	Prince Charles	3,63
Brock	396	Stefansson	2,89
Cameron	396	Air Force	59
Byam Martin	376	Wales	43
Meighen	293	Rowley	43

6.—Areas of Principal Islands, by Region—concluded

Region and Island	Area	Region and Island	Area
	sq. miles		sq. miles
ctic Archipelago—concluded		**Pacific Coast**—concluded	
Southern region—concluded		Princess Royal	870
Vansittart	386	Pitt	537
Russell	349	Banks	400
Jens Munk	330	King	324
White	301	Porcher	199
Bray	281	Nootka	198
Foley	261	Aristazabal	167
Koch	183	Gilford	151
Matty	173	Hawkesbury	143
Royal Geographical Society (the larger of two)	173	Hunter	136
Jenny Lind	170	Calvert	118
Crown Prince Frederic	170	Texada	117
Prescott	167	Swindle	109
Loks Land	164	Quadra	103
Melbourne	149	McCauley	102
Tennent	118	Gil	94
Gateshead	86	Roderick	88
		Gribbell	86
dson Bay and Strait—			
Southampton	15,700	**Atlantic Coast**—	
Coats	2,206	Newfoundland—	
Mansel	1,285	Labrador Coast—	
Akimiski (James Bay)	1,137	South Aulatsivik	167
Belcher (total for group)	1,118	Okak (total for two)	113
Nottingham	543	Tunungayualok	72
Resolution	387	North Aulatsivik	53
Salisbury	312		
Big	310	Island—	
Akpatok (Ungava Bay)	296	Newfoundland	43,359
Charlton (James Bay)	119	Fogo	95
Edgell	106	New World	73
Killinek	104		
		Gulf of St. Lawrence—	
cific Coast—		Cape Breton	3,970
Vancouver	12,408	Anticosti	3,043
Queen Charlotte	3,705	Prince Edward	2,184
Graham	*2,491*	Magdalen (total for group)	88
Moresby	*991*	Shippegan	59
Louise	*108*		
Lyell	*63*	Bay of Fundy—	
Kunghit	*52*	Grand Manan	55

Subsection 4.—Mountains and Other Heights

The predominant geographical feature in Canada is the great Cordilleran Mountain ystem which contains many peaks over 10,000 feet in height. The highest peak in Canada Mount Logan in the St. Elias Mountains of Yukon Territory, which rises 19,850 feet ove sea level. The highest elevations in all parts of the country are shown in Table 7 feet above mean sea level.

7.—Principal Heights in each Province and Territory

NOTE.—Certain peaks, indicated by an asterisk (*), form part of the boundary between political divisions. though their bases technically form part of both areas, they are listed only under one to avoid duplication. Elevaons are given in feet above mean sea level.

Province and Height	Elevation	Province and Height	Elevation
	ft.		ft.
Newfoundland		**Newfoundland**—continued	
ng Range Mountains—		Blue Hills of Couteau—	
Lewis Hills	2,672	Peter Snout	1,600–1,650
Gros Morne	2,644	Central Highlands—	
Mount St. Gregory	2,251	Main Topsail	1,822
Gros Paté	2,152	Mizzen Topsail	1,761
Blue Mountain	2,128	Torngat Mountains—	
Table Mountain	1,900–1,950	Cirque Mountain	5,160

7.—Principal Heights in each Province and Territory—continued

Province and Height	Elevation
	ft.
Newfoundland—concluded	
Torngat Mountains—concluded	
Mount Cladonia	4,725
Mount Eliot	4,550
Mount Tetragona	4,500
Quartzite Mountain	3,930
Blow Me Down Mountain	3,880
Kaumajet Mountains—	
Bishops Mitre	4,060
Finger Hill	3,390
Nova Scotia	
(Spot height—Cape Breton)	1,747
Franey	1,405
Nuttby Mountain (Cobequid)	1,204
Dalhousie Mountain (Cobequid)	1,115
North Mountain (4 miles NE of West Bay Road)	875
Sporting Mountain	675
New Brunswick	
Mount Carleton	2,690
Moose Mountain	1,490
Quebec	
(Spot height—Torngat Mountains)	5,100
Appalachian Mountains—	
Mount Jacques-Cartier (Shickshocks)	4,160
Mount Richardson	3,887
Mount Albert—	
Albert Nord	3,554
Albert Sud	3,775
Mount Logan	3,700
Mégantic Mountain	3,550
Mattawa Mountain	3,500
Bayfield Mountain	3,470
Roundtop (Sutton Mountains)	3,175
Hereford Mountain	2,775
Barn Mountain	2,750
Orford Mountain	2,750
Pinnacle Mountain	2,200
Shield—	
Mount Tremblant	2,900
Mount Sainte-Anne	2,625
Mount Sir Wilfrid	2,569
Monteregian Hills—	
Brome Mountain	1,750
Shefford Mountain	1,700
Mount Saint-Hilaire	1,350
Yamaska Mountain	1,350
Rougemont	1,100
Mount Royal	763
Mount Saint-Grégoire	750
Mount Saint-Bruno	600
Ontario	
Ogidaki Mountain	2,183
Batchawana Mountain	2,142
Tip Top Mountain	2,099
Niagara Escarpment—	
Osler Bluff	1,675
Blue Mountains	1,650
Caledon Mountain	1,400
High Hill	1,163
Mount Nemo	1,000
Manitoba	
Baldy Mountain	2,729
Porcupine Hills	2,700
Riding Mountain	2,000

Province and Height	Elevation
	ft.
Saskatchewan	
Cypress Hills	4,50
Wood Mountain	3,27
Vermilion Hills	2,50
Alberta	
Rocky Mountains—	
*Mount Columbia	12,29
The Twins	12,08
Mount Alberta	11,87
*Mount Assiniboine	11,87
Mount Forbes	11,85
Mount Temple	11,62
Mount Kitchener	11,50
*Mount Lyell	11,49
*Mount Hungabee	11,45
Mount Athabasca	11,45
*Mount King Edward	11,40
Mount Brazeau	11,38
*Mount Victoria	11,36
*Snow Dome	11,34
Stutfield Peak	11,32
*Mount Joffre	11,31
*Deltaform Mountain	11,23
*Mount Lefroy	11,23
*Mount Alexandra	11,21
*Mount Sir Douglas	11,17
Mount Woolley	11,17
*Lunette Peak	11,15
Mount Hector	11,14
Diadem Peak	11,06
Mount Edith Cavell	11,03
Mount Fryatt	11,02
Mount Chown	10,93
Mount Wilson	10,70
Clearwater Mountain	10,42
Mount Coleman	10,28
Eiffel Peak	10,10
Pinnacle Mountain	10,06
Mount Rundle	9,83
The Three Sisters	9,74
Mount Eisenhower	9,03
Mount Edith	8,38
British Columbia	
Vancouver Island Ranges—	
Mount Albert Edward	6,86
Mount Arrowsmith	5,96
Coast Mountains—	
Mount Waddington	13,26
St. Elias Mountains—	
*Mount Fairweather	15,30
*Mount Root	12,86
Columbia Mountains—	
Monashee Mountains—	
Mount Begbie	8,95
Storm Hill	5,30
Selkirk Mountains—	
Mount Dawson	11,02
Adamant Mountain	10,98
Grand Mountain	10,84
Iconoclast Mountain	10,64
Mount Rogers	10,54
Rocky Mountains—	
Mount Robson	12,97
Mount Clemenceau	12,00
Mount Goodsir	11,68
Mount Bryce	11,50
Resplendent Mountain	11,24
Mount King George	11,22
Consolation Mountain	11,20
The Helmet	11,16

For footnotes, see end of table.

7.—Principal Heights in each Province and Territory—concluded

Province and Height	Elevation
	ft.
British Columbia—concluded	
ɔcky Mountains—concluded	
Whitehorn Mountain	11,130
Mount Huber	11,051
Mount Freshfield	10,945
Mount Mummery	10,918
Mount Vaux	10,891
Mount Ball	10,865[2]
Mount Geikie	10,843
Bush Mountain	10,770
Mount Sir Alexander	10,740
Churchill Peak	10,500
Mount Stephen	10,495
Cathedral Mountain	10,464
Mount Gordon	10,346
The President	10,297
Odaray Mountain	10,175
Mount Laussedat	10,035
Mount Burgess	8,473
Yukon Territory	
. Elias Mountains—	
Mount Logan	19,850
Mount St. Elias	18,008[4]
Lucania Mountain	17,147
King Peak	17,130
Mount Steele	16,644
Mount Wood	15,885
Mount Vancouver	15,700[4]
Mount Hubbard	15,013[4]
Mount Walsh	14,780
Mount Alverstone	14,500[4]
McArthur Peak	14,253
Mount Augusta	14,100
Mount Kennedy	13,905
Mount Strickland	13,818
Mount Newton	13,811
Yukon Territory—concluded	
St. Elias Mountains—concluded	
Mount Cook	13,760
Mount Craig	13,250
Badham Mountain	12,625
Mount Malaspina	12,150
Mount Seattle	10,082
Northwest Territories	
Arctic Islands—	
Baffin—	
Penny Ice Cap	6,700
Mount Thule	6,200
Cockscomb Mountain	5,300
Barnes Ice Cap	3,700
Knife Edge Mountain	2,490
Banks—	
Durham Heights	2,400
Devon—	
Ice Cap	6,300
Ellesmere—	
Barbeau Peak	8,540[5]
Commonwealth Mountain	7,500
Mount Jeffers	6,500
Mount Wood	4,700
Mount Cheops	4,600
Mackenzie King—	
Leffingwell Crags	450
Victoria—	
Shaler Mountains	2,150
Mount Bumpus	1,700

[1] The summit of the Cypress Hills, with an elevation of 4,810 feet, is in Alberta. [2] Part of the Alberta–itish Columbia boundary. [3] Part of the British Columbia–Alaska boundary. [4] Part of the Yukon–aska boundary. [5] Highest point on the Canadian Arctic Islands.

Section 2.—Geology*

The bedrock foundation of Canada and its adjacent continental shelves seem rigid nd unchanging to human eyes, yet, in terms of geological time, these rocks represent nly a momentary stage in the evolution of the Continent, an evolution which began more nan 4,000,000,000 years ago. Geological study of most of the present land surface of anada has shown that at various periods and in various regions dark molten rocks rose om great depths, volcanoes erupted on the ancient land and sea floors, thick sequences sediments accumulated, granites were either intruded as molten magma or derived om earlier rocks during intense folding and mountain building, erosion wore down or ubdued the older mountain chains, shallow seas repeatedly encroached on and receded om the Continent of today, continental glaciers covered most of Canada and, as part of nese geological processes, valuable minerals and fossil fuels became concentrated under xceptionally favourable conditions. These interrelated geological processes have produced ne buried crust and the present face of Canada. They control the distribution of its conomic mineral deposits, its physiography and, in large part, its present and potential nd use.

* An outline extracted from a more detailed article on "Geology and Economic Minerals of Canada", prepared y W. D. McCartney of the Geological Survey of Canada, appearing in the 1967 Year Book, pp. 19–32.

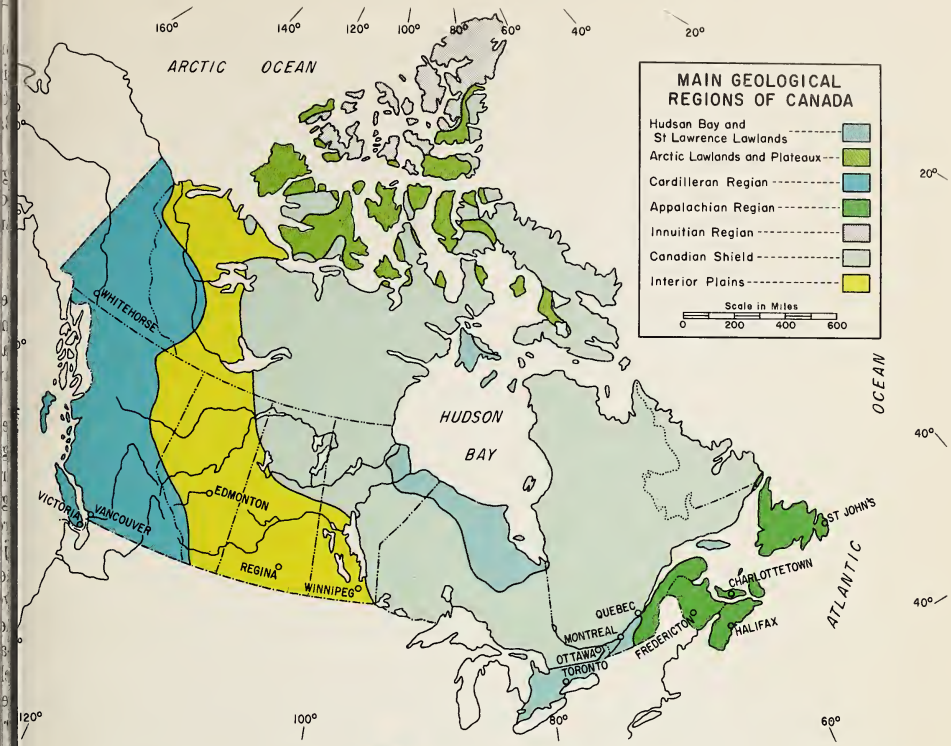
The primary geological subdivisions of Canada are outlined in the following section The Canadian Shield forms the ancient nucleus of the Continent. As well as comprisin the vast areas exposed in Central and Northern Canada, the Shield extends beneath th veneer of younger marine sediments exposed at the present surface in the Hudson Ba region, some Arctic islands, the St. Lawrence Lowlands and the Interior Plains. West the Interior Plains, and north and southeast of the Canadian Shield, deep, elongate trough (geosynclines) developed. These geosynclines received sediments and volcanics whic by folding, were converted into the mountain belts of the Cordilleran, Innuitian an Appalachian regions.

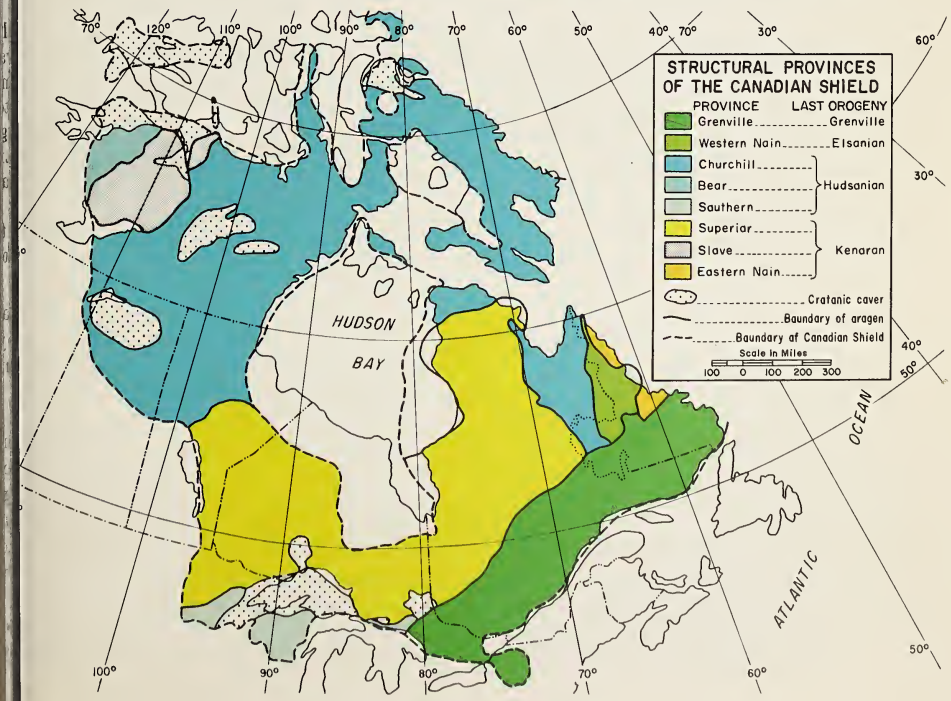
The Canadian Shield.—Precambrian evolution of the present Canadian Shiel extended over more than five sixths of known geological time. During this immens interval, many cycles of volcanism, sedimentation, intrusion, metamorphism, mountai building, erosion and ore formation were completed. The complexities of this history hav become better understood as geological reconnaissance mapping has progressed and a absolute ages of minerals have been determined by isotopic ratios from about 1,500 well distributed samples of the Canadian Shield. Many of the absolute ages represent the age of four main periods of mountain building, termed orogenies. There are eight structura provinces recognized in the Shield, each of which is defined by the equivalent isotopic age of their terminal orogenies as well as being characterized by variations in rock types, degre of metamorphism, and dominant types of ore deposits. Following one or more majo orogenies in a region, that portion involved was stabilized, and relatively undeforme younger Precambrian erosion products were deposited to form basins of cratonic cove rocks, most of which are shown on the map of the Shield. These relatively undeforme late Precambrian basins and remnants of early Palæozoic sediments show that the Canadia Shield has been remarkably stable since late Precambrian time, subject only to encroach ment of younger seas and varying degrees of uplift. In relatively recent geological times Pleistocene glaciation with scouring of bedrock and deposition of clastic materials has pro foundly affected the present drainage and physiography of the region.

A large part of the Shield, extending from Georgian Bay to the Strait of Belle Isle has long been recognized as forming a distinct segment called the "Grenville". It wa named after the Grenville series, characterized by crystalline limestone, impure lim strata, and large areas of sedimentary gneisses in various stages of alteration to granite The eastern part of the province contains large igneous intrusions of anorthosite. The ag relations between Grenville strata and those of the neighbouring Superior province ar puzzling. Near Sudbury, as well as at the south end of the Labrador Trough, beds ca be traced across the boundary into more metamorphosed rocks of Grenville type. It i believed, therefore, that the distinctive features of the Grenville may be related more t the time and degree of metamorphism than to distinctions in the original age of deposition of strata.

The areas of undeformed Precambrian cratonic cover rocks shown on the facing ma represent dominantly clastic detritus washed into basins from the consolidated, nearby older rocks. At times, marine incursions into these basins led to deposition of limeston and dolomite, and volcanics were deposited in others.

The Appalachian Region.—This region comprises the Atlantic Provinces an southeastern Quebec and is the northern continuation of a long belt of folded strata ex tending along the eastern side of the United States. It is on the site of a long, linear trough or geosyncline that existed mainly in Palæozoic time in which great thicknesses of sedimen tary and volcanic strata were laid down. The northwestern boundary of the region lie adjacent to the Canadian Shield and to the St. Lawrence Lowlands. The strata in the Appalachians have been folded and faulted along axes that strike northeasterly except fo local regions such as the Gaspé Peninsula where strikes swing to the east. Thus, strata o different kinds and ages and some belts of intrusive rocks normally form northeasterly


MAIN GEOLOGICAL REGIONS OF CANADA
Hudson Bay and St Lawrence Lowlands
Arctic Lowlands and Plateaux
Cordilleran Region
Appalachian Region
Innuitian Region
Canadian Shield
Interior Plains
Scale in Miles
0 200 400 600
ARCTIC OCEAN
HUDSON BAY
ATLANTIC OCEAN
WHITEHORSE
VICTORIA
VANCOUVER
EDMONTON
REGINA
WINNIPEG
QUEBEC
MONTREAL
OTTAWA
TORONTO
FREDERICTON
HALIFAX
CHARLOTTETOWN
ST JOHN'S
160°
140°
120°
100°
80°
60°
40°
20°


STRUCTURAL PROVINCES OF THE CANADIAN SHIELD
PROVINCE
LAST OROGENY
Grenville — Grenville
Western Nain — Elsanian
Churchill — Hudsonian
Bear — Hudsonian
Southern — Hudsonian
Superior — Kenoran
Slave — Kenoran
Eastern Nain — Kenoran
Cratonic cover
Boundary of orogen
Boundary of Canadian Shield
Scale in Miles
100 0 100 200 300
HUDSON BAY
ATLANTIC OCEAN
70°
120°
110°
100°
90°
80°
70°
60°
50°
40°
30°

trending bands, many of which are responsible for development and orientation of peni sulas, bays and ridges of the region. Two principal periods of orogeny called the Taco and the Acadian have been recognized. The Taconic occurred near the close of Ordovici time and the Acadian about Middle Devonian time. In Canada the Taconic disturban were fairly widespread, the Acadian were more so, affecting areas that were previous affected by the Taconic as well as areas that were not, and the Appalachian orogeny, wh was a major feature in parts of the United States, was of minor and local importance.

Metamorphosed Precambrian rocks of Grenville type are exposed to form the L Range of western Newfoundland and small areas in Cape Breton and New Brunswi On the east flank of the Appalachian geosyncline, as exposed in southeastern Newfoundla younger Precambrian volcanics and sediments are relatively unaltered and were intrud by small granite bodies 580,000,000 years ago. Although Precambrian rocks probab underlie much of the central Appalachians, they are buried beneath the thick Palæoz sequence.

Cambrian slates, minor limestones and local areas of volcanics lie above and adjac to Precambrian rocks. Massive sulphide deposits in schists derived from Cambri volcanics in southern Cape Breton and southeastern Quebec were formerly mined. T overlying Ordovician beds were formed at the early stage of development of the Appa chian geosyncline. From west to east, and depending on their position in the geosynclin the thick Ordovician sections comprise limestone and/or slate in western Newfoundla and adjacent to the St. Lawrence Lowlands in southeastern Quebec. Silurian strata rather similar to Ordovician rocks but are not known to contain large mineral deposi Unlike the Ordovician submarine volcanics, some or most of the Silurian volcanics w formed on land. This may be one factor in the marked difference in known ore content the two volcanic assemblages.

In Devonian time, granite batholiths were emplaced in the Atlantic Provinces, a smaller stocks of the same age were intruded in Gaspé and southeastern Quebec. At t time, older beds were folded and metamorphosed to varying degrees, particularly near t margins of the granites.

Following the folding and granite intrusion that formed the Appalachian Mountai adjacent basins were rapidly filled with coarse and progressively finer-grained detri eroded from the adjacent mountains. Some areas included marine beds, such as t petroliferous Albert shales of eastern New Brunswick which yield oil and gas. Af initial infilling of basins, shallow Mississippian seas encroached on the valleys and deposit limestones. Many thousands of feet of clastic sediments were deposited after the Mis sippian seas retreated. These beds of Pennsylvanian age contain the commercial c measures of Nova Scotia. In Triassic time, outpourings of basalt, particularly preserv adjacent to and below the Bay of Fundy, terminated rock-forming processes in the Ap lachians. Subsequent erosion has yielded the present, fairly subdued topography of t former mountain chain.

The Cordilleran Region.—The Cordillera of Western Canada consists of th parallel northwest-trending geological and topographical systems. The Eastern Syst of western Alberta, eastern British Columbia, eastern Yukon, and western Northw Territories includes the Rocky, Richardson, Franklin and Mackenzie Mountains foothills, and several intervening plateaux. Comprising the Western System are Coast Mountains along the west mainland of British Columbia, and the St. Elias Mounta in southwestern Yukon, the Queen Charlotte Islands and Vancouver Island. The Inte System lies between the Eastern and Western Systems. It contains the plateaux, pla and subdued mountain ranges of the interior of British Columbia and Yukon Territory.

Unmetamorphosed Precambrian to Cretaceous sedimentary strata form most of Eastern System. These sedimentary strata, which have been uplifted several thous feet by fault movements, are well exposed in the Rocky Mountains. The Interior Syst is composed largely of metamorphic, sedimentary and volcanic rocks of Precambrian

esozoic ages, which are intruded by numerous, generally unconnected, granitic stocks and tholiths. In places, these rocks are overlain by great thicknesses of Cretaceous and rtiary volcanic and sedimentary strata. Flat-lying Tertiary basalt flows form many the plateaux. In the Western System, the rugged Coast Range consists of almost con-uous exposures of steeply eroded granitic rocks of Mesozoic and Tertiary ages flanked both sides by late Palæozoic and Mesozoic volcanic rocks and by basins of Cretaceous d Tertiary sedimentary rocks.

During late Precambrian times, beds of quartzite, argillite, dolomite and other sedi-ntary rocks now comprising the Purcell and Windermere beds were deposited in the stern Cordilleran geosyncline, a vast shallow sea that extended from south of the present nada–United States border to the Arctic Ocean. From Cambrian until mid-Devonian ne, sedimentary strata consisting of shale, quartzite and limestone continued to be posited in the area which now forms the Eastern and Interior Systems. In southeastern itish Columbia, the world-famous Sullivan zinc-lead orebody lies in Purcell beds and is ought to have formed during late Precambrian time.

Beginning in the mid-Devonian and lasting until early Jurassic, the Western System d most of the Interior System consisted of a deep oceanic trough in which accumulated bmarine basalts and fine argillaceous and cherty sediments such as those of the Permo-rboniferous Cache Creek Series and the Triassic Takla Series. Meanwhile, sedimentary ata were forming in the more shallow waters of the Eastern System, east of the present cky Mountain Trench. Thus, in the Rocky Mountains, Palæozoic limestones, dolomite, artzite and shale are overlain in many places by similar Mesozoic rocks.

The first large granitic bodies were intruded into rocks of the Interior and Western stems during early Jurassic time. They were composed mainly of granodiorite and artz diorite, but ranged in composition from gabbro to granite. These intrusions were companied by folding, faulting and metamorphism. Although this orogeny may have en most intense during late Jurassic to early Cretaceous time, intrusion continued until rly Tertiary time. Many mines in the Cordillera are related to Mesozoic and Tertiary trusions. Uplift of the rocks during these processes created mountain chains and, by rly Cretaceous time, rhyolites, andesites, basalts and sediments were being deposited in ter-mountain basins largely separated by the uplifted areas. Erosion of the mountains llowed and, in late Cretaceous time, sandstones, conglomerate, shale and extensive beds coal accumulated in large isolated basins such as that now occupied by the Nanaimo ries on Vancouver Island. Gradual uplift continued so that by Tertiary time the basins re very local and entirely continental. Sandstones and other sediments derived from vated areas continued to be deposited in the low-lying valleys.

Uplift and mountain building in the Eastern System was delayed until the Laramide ogeny in early Tertiary time. Unlike the earlier orogenies to the west, no significant nitic bodies were intruded in the Eastern System. In many parts of the Rocky Moun-ns, Precambrian and Palæozoic strata were thrust several miles to the east along low-gle westward-dipping fault planes. Thus, these transported older rocks commonly me to rest above younger beds. At the same time and again in late Tertiary time, the ded Western and Interior System rocks, as well as those of the Eastern System, were ain uplifted. Erosion, including glacial scouring, which in places has continued to the esent day, formed deep valleys in the elevated rocks and has produced the present con-uration of the Coast Range, the Rockies and the intervening mountain chains.

In the Interior System, much lava was deposited on the plateaux at various times ring the Tertiary period, mainly in or about Miocene time. The lavas are chiefly saltic and apparently welled from long fractures rather than from individual volcanoes. ndstone, shale and volcanic ash were deposited in local freshwater basins in the same belt.

In latest Tertiary and Pleistocene times, some uplift and minor volcanic deposition curred in the Western and Interior Systems. Very recent, post-glacial volcanic activity represented by several well-preserved cinder cones in north, southwest and central itish Columbia.

Glaciation, as in other parts of Canada, was widespread in the Cordillera during th Pleistocene Epoch, and glaciers persist today in many mountain systems, chiefly in th St. Elias and Coast Mountains and the Columbia Ice Field in the Rockies. A large pa of the Yukon Territory, however, escaped Pleistocene glaciation because the high St. Eli Mountains barred moisture-laden winds from the Pacific to such an extent that ice did n accumulate in parts of the interior, despite the depressed temperatures of the time. Th lack of glaciation was largely responsible for the preservation of the Klondike placer go deposits.

Innuitian Region.—North of the Arctic Plains and Plateaux, where Palæozo limestones rest on Precambrian generally-stable crystalline rocks, deep crustal depressio were initiated in late Proterozoic time and received thick deposits of carbonates and shal (miogeosynclinal type) and, in northern Ellesmere Island, volcanics and greywack (eugeosynclinal type). In the southern basins, Proterozoic sediments are mainly carbo ates and coarse-to-fine clastic sediments. Overlying these conformably are thick layers lower Palæozoic carbonates which are thicker and include more abundant dark shales the north. Middle Ordovician gypsum beds extend in places across the southern basin Carbonates are admixed with muds and sands in parts of the Upper Silurian to Midd Devonian beds, and the influx of these clastic materials probably reflects relatively min orogenies and periodic uplifts such as the Boothia Arch in the region. Folding of th eugeosynclinal volcanics of northern Ellesmere Island produced land areas from whi sands were swept southward to form Upper Devonian non-marine sandstones in th miogeosynclinal basins. The total assemblage of sediments is more than 35,000 feet thi in some districts. The dominant folding of the Franklinian geosyncline, called th Ellesmerian orogeny, occurred near the close of Upper Devonian time. With the exceptio of the Cornwallis fold belt discussed below, the resulting folds of the Innuitian Regi trend southwesterly from northern Ellesmere Island and swing westerly through the Par Islands. The Cornwallis fold belt interrupts this trend at right angles because it lies alo a buried north-trending prong of Precambrian rocks, which extend from exposures of th Boothia Peninsula. This elongate Precambrian basement rose periodically at least s times to produce north-trending faults and folds in the overlying Palæozoic beds of th Cornwallis fold belt, whereas the Franklinian geosyncline was deformed by somewh younger and more widespread compressional crustal forces.

Following the Ellesmerian orogeny, a vast area including the present Sverdrup Islan and much of western Ellesmere Island was depressed to form the site of deposition a composite thickness of 60,000 feet of Pennsylvanian to Tertiary volcanics, shales, san stones, some gypsum and, in the upper part, a thick assemblage of non-marine clast sediments. The rocks of this Sverdrup Basin were deformed about the end of the Mesoz Era by the Laramide orogeny. Late Palæozoic gypsum beds, which tend to flow und high pressure, were forced upward to intrude overlying Mesozoic beds. Gypsum diapi domes later penetrated Tertiary beds.

Arctic Lowlands and Plateaux.—These geological and physiographic divisions l in large basins separated by arches and belts of exposed Precambrian crystalline rock Gently inclined or flat sediments underlying the basins tend to be thin sandstones a limestones near the basal contact with metamorphosed Precambrian rocks but limeston and dolomites of middle Ordovician to early Devonian age are the principal rock typ and at some localities are estimated to be up to 18,000 feet thick. Shales, sandston and restricted areas of conglomerates of middle Devonian to late Devonian age are normal the youngest rocks preserved.

Arctic Coastal Plain.—This plain comprises late Tertiary or Pleistocene sand a gravels, which dip gently seaward along the northern exposed border of the Innuiti Region. The very young beds cover the extensions of eroded fold belts and the Sverdr Basin. Although of minor land extent, they or their equivalents probably extend far o on the Arctic continental shelf.

The Interior Plains.—The Interior Plains are underlain by undisturbed or gently ked or tilted sedimentary strata, which overlap the western border of the Canadian ield and merge with the eastern foothills of the Cordilleran region. The Shield slopes a rate of 15 feet per mile under the Great Plains, in the western part of which the over- ng strata reach a thickness of 10,000 feet. The older overlying beds have been bevelled erosion along the border of the Shield, exposing in central Manitoba marine beds of estone, sandstone and shale of Ordovician, Silurian and Devonian ages. Farther north e exposed Palæozoic strata are mainly Devonian. The Palæozoic formations are over- n by early Mesozoic strata of marine origin and these by both marine and freshwater etaceous formations, which are the uppermost strata in much of Saskatchewan and berta. In places, however, as at Turtle Mountain in Manitoba and the Cypress Hills Saskatchewan, these are overlain by remnants of early Tertiary formations.

St. Lawrence and Hudson Bay Lowlands.—The St. Lawrence Lowlands are derlain by marine beds deposited during much of Palæozoic time. Rather similar late rdovician to Devonian beds are exposed in the Hudson Bay Lowlands. Small areas of læozoic beds are preserved at various localities on the Canadian Shield between these o Lowlands and suggest that arms or shallow straits of Palæozoic seas may have con- cted the present Hudson Bay and the St. Lawrence Lowlands areas. The St. Lawrence wlands from Quebec City to Windsor are occupied by about one half of the population Canada, supported by much arable land and major industrial concentrations. These wlands are divided by an exposed southeasterly-trending prong of the Canadian Shield lled the Frontenac Axis, which extends into the United States northeast of Lake Ontario. uthwest of the Frontenac Axis, marine sedimentary rocks of Cambrian to Mississippian e rest on buried Precambrian rocks. Known formations there have an aggregate thick- ss of almost 6,000 feet. Rocks are mainly limestones, shales and sandstones deposited generally shallow seas.

urficial Deposits

The continental glaciation of most of Canada has removed weathered bedrock and sidual soils and has almost certainly removed some types of ores such as pre-Pleistocene acer gold deposits, laterites, and upper portions of metallic and manganiferous ore eposits, which had formerly been enriched under stable near-surface conditions. Material eposited includes dominantly clastic detritus such as tills, esker gravels, outwash gravels nd sands, or rock flour deposited in lakes or shallow seas in the form of multiple layers of arved clay or massive clay beds. Maps showing the surface distribution of these materials, ublished by federal agencies, reflect some physiographic features and present and potential nd use.

Section 3.—Federal Government Surveying and Mapping*

The needs for maps and surveys of Canada are met mainly by the Department of nergy, Mines and Resources. Although not all Branches of this Department make sur- eys and compile maps, many of them are involved in such work either wholly or partly. hey compile topographical, geological and aeromagnetic maps, aeronautical and hydro- raphic charts, as well as specialized maps showing electoral district boundaries, land use nd other features. In carrying out these tasks, the Department is guided partly by ng-range plans based on general national needs and partly by requests from other govern- ent agencies and private enterprise. Some types of maps and surveys are also produced y provincial and private agencies and, to avoid duplication, the Department co-ordinates s work with these bodies. Other types—such as hydrographic charts—are produced xclusively by the Department.

* Prepared by H. G. Classen, Public Relations and Information Services, Department of Energy, Mines and esources, Ottawa.

The staff of the Department numbers about 4,000, of whom 1,000 are scientists a engineers and 1,300 are technicians. Each year, some 1,500 men are sent into the field make surveys and to carry out research. Of the various Branches, the following particularly concerned with surveying and mapping: Surveys and Mapping Branch (g detic and topographic surveys, legal surveys of Canada lands, geographical atlases, electo maps and aeronautical charts); Marine Sciences Branch (hydrographic charts of sea co and inland navigable waters); Inland Waters Branch (a wide variety of surveys on inl waters); Geological Survey of Canada (geological features); and Earth Physics Bra (geophysical maps).

Types of Surveys.—In the field of geodesy, the Geodetic Survey maintains a netw of horizontal and vertical control points across Canada. Much of its present activity centred on achieving greater density of control and closing gaps in Southern Canada. T ultimate goal is the establishment of at least one horizontal and vertical control po within 10 miles of any point in established and economically important areas. During 1969 survey season, 38 field parties were involved in this activity.

The Topographical Survey is proceeding with the compilation of topographical ma The mapping of Canada at the scale of four miles to one inch is complete, and this se will now only be revised and updated from time to time. In the scale of one mile per inches, 4,011 map sheets are now available, of a planned 13,150. Sheets published to d cover most of the settled areas of Canada and certain wilderness areas of interest beca of resources or defence requirements. In the relatively large scale of one mile per 2½ inch 578 maps are available, covering all major cities and their suburbs. Wide acceptance h been found for photomaps, a substantially new map-type made possible by advances in photography and photogrammetry. The Topographical Survey relies mostly on aer photography in mapping and does not send out field parties.

The Legal Surveys Division is responsible for the technical management of legal s veys of land under federal jurisdiction, such as the northern Territories, national par and Indian reserves. It also executes such surveys on behalf of administering departme collaborates in the demarcation of provincial boundaries, prepares descriptions of electo districts and generally provides land-surveying services to other departments. Dur the 1969 surveying season, this Division sent out 15 field parties.

The Surveys and Mapping Branch is the major agency in Canada for the preparat of aeronautical charts showing airports, airways and radio and other aids necessary for navigation. As a service to map-makers, prospectors, engineers, foresters, town plann and others interested in that field, the Department maintains a National Air Photo Libr containing a collection of all air photographs taken by or for the Federal Government about 3,325,400 black-and-white prints and 13,492 colour prints. During the course o year, the Library may receive requests for as many as 850,000 copies of those prints. western branch of the Library is located in the Institute of Sedimentary and Petrole Geology in Calgary.

The Marine Sciences Branch of the Department produces and distributes all Canadi navigational charts and tidal information. Its surveys of the geological and geophysi characteristics of the ocean floor provide basic information for mineral exploration and studies of oceanographic phenomena are designed to support fisheries, transportati coastal engineering and defence. Branch headquarters is in Ottawa and regional offi are located in Dartmouth, N.S., and Victoria, B.C. It operates a fleet of 11 ships; five a based in Nova Scotia, two in Ontario at Burlington on Lake Ontario, and four in Brit Columbia. A large number of sounding launches are used, either in conjunction with t ships or independently.

The Hydrographic Service of the Branch distributes over 300,000 charts a year. T number of separate charts on issue stands at about 1,200, including nautical as well special charts such as those used by petroleum companies in their search for submarine deposits. A growing number of charts is being sold to owners and operators of pleasu

t plying Canada's lakes and rivers. In oceanography, the most notable recent event the circumnavigation of the Americas by the survey ship *Hudson*, from November) to October 1970. The ship's scientific staff collected a large variety of data in the ntic, Pacific and Arctic Oceans.

The Inland Waters Branch carries out a wide variety of surveys on Canada's inland ers, with emphasis on water pollution, conservation and use. Among these are con- ous surveys and surveillance of the physical environments of lakes; water levels, am flow, sediment transport and shore erosion; groundwater; and existing and pro- ed uses of water in Canada.

Geological surveys provide an inventory of the potential mineral resources of Canada, in the discovery of mineral deposits, and assist in other aspects of the national economy nenced by geological factors. Each year, approximately 100 parties are placed in the . Large reconnaissance projects are mounted in the northern regions of the country, more detailed investigations in the better-known southern areas. Geological maps published either separately or, more commonly, as part of scientific papers.

Both the Geological Survey and the Earth Physics Branch carry out geophysical eys, resulting in maps showing such features as variations in terrestrial magnetism, ity and seismology. The geophysicists of the Geological Survey are interested mainly utlining local magnetic variations indicative of mineral deposits, while those of the h Physics Branch map the earth's total magnetic field. The Earth Physics Branch ates 25 fully instrumented seismic observatories throughout Canada, whose records used in compiling and updating an earthquake zoning map of Canada of interest to itects and engineers. A gravity map of Canada is also being published and updated he Branch.

In the drafting and printing of the maps, highly advanced techniques for the auto- ic transfer of terrain features from air photos to drafting sheets and precise lithographing combined to assure speedy processing of field data and the production of colourful, y understood and relatively inexpensive maps for every type of user, from vacationer own planner and from prospector to pilot. The Department operates a large modern t to print the maps and charts compiled by its several Branches as well as maps and ts compiled by other government departments and agencies. The Surveys and Map- Branch has a stock of 20,800,000 maps from which it distributes about 3,000,000 ually.

Section 4.—Archaeology

The 1968 Year Book contains a special article on "Archaeology in Canada", prepared cientists of the National Museum of Man, National Museums of Canada. The article review of the study of Canadian prehistory and summarizes the interpretations made, o the point of writing, of findings by scientists working in this discipline throughout the s. The 1969 Year Book, at pp. 21-24, and the following paragraphs update the infor- ion in the article relating to recent archaeological work undertaken in Eastern, Western Northern Canada by outlining National Museum of Man staff and contract-supported work conducted during 1968 and 1969, respectively.

Archaeological Work in Eastern Canada.—During 1969, J. V. Wright investigated mber of sites in the Bruce Peninsula region of Ontario. Particularly important was Schaefar Farm site where excellent bone preservation will permit determination of the istence pattern of the Archaic occupants of the site. He also excavated a multi- ponent fishing camp at the narrows between Lake Simcoe and Lake Couchiching in ario. Salvage excavations were carried out at the fifteenth-century Nodwell site in Elgin, Ont., and positions of at least six longhouses and sections of the palisade were sed.

R. Marois conducted a survey between Plaisance and Oka on the north shore of the wa River in Quebec. The objectives of this project were to discover the nature of the

Laurentian Archaic in that area and the development of the so-called Laurentian Iroqu
A survey carried out on the Gatineau drainage system south of La Vérendrye Park revea
a few almost completely eroded sites and some surface specimens on the shores of the lak

D. Sanger continued field work in the Passamaquoddy Bay region of New Brunswi
sponsored jointly by the National Museum of Man and the Province of New Brunswi
Excavations were concentrated at the mouth of the Digdeguash River where four sites w
sampled and nearly 1,000 artifacts recovered, including stone projectile points, pottery, a
bone, antler and tooth implements. Most of the sites appear to represent relatively rec
occupation but the Carson site may have a pre-ceramic component dating from the fi
millennium B.C.

D. MacLeod continued a salvage survey project in the Churchill Falls area of cent
Labrador. An attempt to salvage the prehistory of the upper Churchill River before it
flooded by the Churchill Falls hydro development was terminated because of the hi
water level. At Twillingate in Newfoundland, excavation was completed on three relat
sites pertaining to what has been called the Maritime Archaic culture. Test excavation
the nearby area located two additional sites of the same culture, one of which was a "r
paint" cemetery.

Contract-supported work in Eastern Canada included the following projects: Jacq
Bordaz, Université de Montréal, undertook the archaeological administration of the Poin
aux-Buissons site excavation near Beauharnois in Quebec, which is being carried out
members of the Quebec Prehistoric Archaeology Society; K. C. A. Dawson, Lakehe
University, excavated prehistoric sites on the shores of Lake Nipigon in Ontario; W.
Hurley, University of Toronto, carried out archaeological salvage on the Montreal Riv
site, which is a major stratified site containing sequential occupations extending over
period of at least 4,000 years; and W. Fitzhugh, Cambridge, Massachusetts, conducted
archaeological survey with site excavation at Lake Melville in Labrador.

Archaeological Work in Western Canada.—R. Wilmet continued work at Anah
Lake in west-central British Columbia. At the Potlatch site two structures and two tra
mounds were excavated, as well as a number of exploratory trenches, and additional mater
representing the early historic Chilcotin occupation was recovered. The house structu
differed from the Chilcotin winter houses uncovered in 1968, and at least one was definite
associated with microblades. This material represents a much earlier component of whi
sporadic remains were encountered in 1968. Approximately the same situation existed
the Goose Point site where a Chilcotin winter lodge and an earlier structure were excavate
The Chilcotin house yielded one trade item, indicating contemporaneity with the Chilco
component at Potlatch. The earlier dwelling was associated with projectile points indicati
an earlier time level, perhaps coterminous with the microblade complex at the Potlatch si

G. F. MacDonald carried out the fourth and final year of the Prince Rupert Harbo
project on the northern coast of British Columbia with a crew of 36 university studen
This was the second year of investigations at site GbTo-31, a winter village of the Co
Tsimshian on Digby Island. Excavations in 1968 determined the initial occupation of t
site at more than 4,000 years ago, and a depth of cultural deposits of as much as 14 fe
A collection of comparative osteological samples of birds and aquatic and land mammals
the north Pacific Coast was made and, as part of a preservation program, latex moulds we
made of totem poles from abandoned historic Tsimshian villages on the Skeena River.
particular note was the excavation of two house sites, each of which contained remains o
series of stratified house floors spanning an estimated 2,000 years and possibly belongi
throughout that time to particular sub-divisions (corporate land-holding groups) of t
tribe. Clusters of burials, representing the occupants of the houses, were located in t
shell dump immediately behind the houses.

Contract-supported work in Western Canada included the following projects: C.
Borden, University of British Columbia, prepared a final report on an extensive archae
logical sequence recovered from the Fraser Canyon; J. Cybulski, University of Toron

lyzed a large sample of human skeletal remains from the Tsimshian area of British lumbia; Howard Savage, Royal Ontario Museum, prepared a comparative collection of mmal and avian skeletal remains from the north coast of British Columbia and analyzed haeological faunal remains recovered previously from this region; Bjorn Simonsen, iversity of Victoria, conducted an archaeological survey and excavated sites in the cate Strait–Milbank Sound area of British Columbia, which yielded valuable information the direction and temporal placement of exchange of cultural traits between the northern l central coast tribes; and David Wyatt, Brown University, conducted archaeological avations in the Nicola Valley of British Columbia, aimed at clarifying cultural differ- es between the Athabaskan and the Interior Salish-speaking peoples known to have in- bited the Nicola Valley in the past.

Archaeological Work in Northern Canada.—J. V. Wright excavated a Shield haic component of the AL-7 site on Aberdeen Lake, District of Keewatin in the North- t Territories. Excavations were oriented toward testing the hypothesis that this as- blage originated in the Northwest Territories and occupied the areas to the east as they e released by the retreating Laurentide ice sheet.

W. N. Irving salvaged a late prehistoric single-component Athabaskan site on the ty Mile River near Dawson in Yukon Territory and undertook a survey of the New mpster Highway into the Blackstone area where remains of an abandoned village were ated. Two large hearths were discovered and artifacts collected. Work was done with informant who provided ethnohistoric information on the late prehistoric settlement terns, the annual cycle of the Kutchin Indians and major population movements during early nineteenth century.

D. W. Clark investigated an obsidian source reported by natives on the Koyukuk er, which resulted in the location of 30 sites and flaking places probably related to the er part of the northern Archaic traditions as defined by Anderson for Onion Portage on Kobuk River. Also found in these sites were fragments of two fluted points apparently ted to other fluted or "Clovis" point finds in northern Alaska. A site reconnaissance art of the Mackenzie River system and Colville Lake was carried out and in the latter a small blow-out sites were located which related to the Arctic Small Tool tradition.

R. J. McGhee undertook archaeological survey and excavation along the Beaufort coast in the vicinity of Tuktoyaktuk in the Northwest Territories. A deeply strati- site was excavated in the abandoned Mackenzie Eskimo whaling station of Kittegazuit, cing the white-whale hunting specialization of these people for several centuries into the t. The first Arctic Small Tool tradition site to be found in the Mackenzie delta area s located at Point Atkinson.

Contract-supported work in Northern Canada included the following projects: J. Cinq- rs, University of Wisconsin, surveyed for archaeological sites on the Upper Porcupine er, continuing research begun in northern Yukon Territory by W. N. Irving; A. P. Cartney, University of Wisconsin, excavated a Thule Eskimo village at Silumiut and veyed for sites in adjacent areas, the main emphasis being placed on the recovery of haeological material with which to define a regional variant of Thule culture in the enteenth century; J. F. V. Millar, University of Calgary, conducted salvage operations he vicinity of Fisherman's Lake in the Northwest Territories, an area containing sites great interest because of their stratigraphy and remarkably old C-14 dates; and W. C. ble, McMaster University, conducted an archaeological survey in the vicinities of Great ar Lake and Great Slave Lake in the Northwest Territories.

Radiocarbon Program.—By the end of 1969, 47 radiocarbon samples received from f and contractors had been processed and catalogued; 39 samples were submitted to oratories for dating during 1969 and results were received on 48 samples dated during 8 and 1969. Descriptions of these were prepared for publication in *Radiocarbon.* scriptions of samples dated by the Geological Survey of Canada were edited for publica- n in *Geological Survey of Canada Radiocarbon Dates* X.

Section 5.—Climate and Time Zones*

Subsection 1.—Climate

Just as there are great differences in the weather throughout Canada at any give instant, there are also many climates. These climates are similar to those in Europe a Asia extending from the Arctic down to the mid-northern hemispheric latitudes. Becau Canada is situated in the northern half of the hemisphere, most of the country loses mo heat annually than it receives from the sun. The general atmospheric circulation co pensates for this and at the same time produces a general movement of air from west t east. Migrant low pressure areas move across the country in this "westerly zone", pr ducing storms and bad weather. In intervals between storms there prevails the fa weather associated with high pressure areas.

Although the movement of migrant high and low pressure systems within the zo of the westerlies is the most significant climatic control over Canada, the physical geograph of North America contributes greatly to the climate. On the West Coast, the weste Cordillera limits mild air from the Pacific to a narrow band along the coast, while th prairies to the east of the mountains are dry and have extreme temperatures because the are shielded from the Pacific Ocean and are in the interior of a large land mass. In additio the prairies are part of a wide north-south corridor open to rapid air flow from eith north or south which often brings sudden and drastic weather changes to this interi area. On the other hand, the large water surfaces of Eastern Canada produce a conside able modification to the climate. In southwestern Ontario winters are milder with mo snow, and in summer the cooling effect of the lakes is well illustrated by the number resorts along their shores. On the East Coast, the Atlantic Ocean has considerable effe on the immediate coastal area where temperatures are modified and conditions mad more humid when the winds blow inland from the ocean.

The following table gives temperature and precipitation data for typical stations i the various regions of Canada. Temperatures in this table refer to observations taken i a thermometer shelter which has been placed in a representative location with the the mometer bulbs four feet above the surface of the ground. Mean January and July tem perature data are based on records over the 30-year period from 1931 to 1960 except f far northern stations where the available period of record is shorter. After an averag temperature is obtained for each day in January over a 30-year period, the mean Januar temperature may be arrived at by striking a mean of these 930 daily values. The mea July temperatures may be obtained in a similar manner. The highest and lowest tempe atures on record refer to the absolute extremes for the entire period of record at eac station. Average dates are shown for the last occurrence in spring of a temperature 32°F or lower and for the first occurrence in autumn of freezing temperatures at the fou foot level in the thermometer shelter.

The official Canadian rain gauge is a small cylinder in which the rain is caught an then measured to one hundredth of an inch with a simple measuring device. Freshl fallen snow is measured as it lies on the ground and recorded to the tenth of an inch. Tot precipitation values as shown in the table are the sum of the total rainfall and one tenth the total snowfall. For the purposes of this table, a day with precipitation is one on whi at least one hundredth of an inch of rain or one tenth of an inch of snow has fallen.

* Subsections 1 and 2 of this Section were prepared by the Canadian Meteorological Service, Toronto. A com prehensive study on The Climate of Canada, also prepared by the Meteorological Service, was carried in the 19 Year Book, pp. 23-51. Supplementing that textual material, detailed tabulations of climatic factors for 45 individu meteorological stations across the country were carried in the 1960 Year Book, pp. 33-77. A reprint is available fro the above source giving the complete textual and tabular data. A special article on The Climate of the Canadi Arctic appears in the 1967 Year Book at pp. 55-74, an augmented reprint of which is also available from the Mete rological Service.

8.—Temperature and Precipitation Data for Typical Stations in the Various Districts

District and Station	Temperatures (Fahrenheit)						Precipitation		
	Mean Jan.	Mean July	Highest on Record	Lowest on Record	Av. Dates of Freezing Temperatures (32°F or Lower)		Total (All Forms)[1]	Snowfall	Av. Number of Days (All Forms)
					Last in Spring	First in Autumn			
							in.	in.	
wfoundland—									
nd of Newfoundland—									
elle Isle	13.5	49.1	73	−31	June 21	Sept. 26	33.56	92.0	143
ander	20.8	62.3	96	−17	June 2	Oct. 5	40.35	127.1	201
. Andrew's	24.6	59.3	81	−11	June 4	Sept. 28	42.66	64.6	171
. John's	24.3	59.7	93	−21	June 6	Oct. 9	60.98	149.7	207
rador—									
artwright	7.5	55.7	97	−36	June 23	Sept. 7	38.15	183.1	179
oose	2.2	61.4	100	−38	June 5	Sept. 16	32.93	157.6	173
itime Provinces—									
ce Edward Island—									
harlottetown	19.6	65.6	98	−23	May 12	Oct. 17	43.49	105.0	166
a Scotia—									
nnapolis Royal	25.5	65.3	91	−13	May 12	Oct. 10	45.61	75.8	154
alifax	26.0	65.3	99	−21	May 1	Oct. 28	54.39	70.9	156
ydney	24.3	64.9	98	−25	May 24	Oct. 15	51.37	95.5	176
armouth	27.7	61.9	86	−12	May 2	Oct. 24	50.00	81.7	158
w Brunswick—									
hatham	14.8	66.7	102	−43	May 22	Sept. 26	39.18	99.6	154
rand Falls	10.6	65.0	98	−46	May 26	Sept. 22	40.50	108.1	104
oncton	17.8	65.6	99	−36	May 24	Sept. 23	40.96	108.6	155
int John	19.5	63.0	94	−28	May 16	Sept. 30	53.57	97.7	156
ebec—									
thern—									
ort Chimo	−11.0	53.3	90	−51	June 24	Aug. 27	16.47	69.5	146
oucdjouac (Port Harrison)	−13.0	48.0	86	−57	July 1	Aug. 30	15.51	64.5	134
itchequon	−9.1	56.7	90	−57	June 11	Sept. 12	29.64	108.4	193
hefferville	−9.4	55.1	88	−59	June 19	Aug. 31	29.40	134.5	185
thern—									
agotville	3.5	64.2	96	−46	May 27	Sept. 19	37.67	127.0	175
ontreal	16.3	70.8	97	−29	Apr. 25	Oct. 21	41.19	98.6	167
ointe au Père	12.5	59.3	99	−33	May 16	Sept. 30	32.73	110.7	154
uebec	11.3	66.7	97	−34	May 7	Oct. 11	41.67	119.8	158
pt Îles	7.1	59.6	90	−46	May 31	Sept. 15	42.39	164.3	142
herbrooke	15.2	68.2	98	−42	May 13	Sept. 26	39.15	95.0	174
tario—									
thern—									
apuskasing	−0.1	63.2	101	−53	June 10	Sept. 5	33.78	123.1	184
oux Lookout	−0.4	65.7	103	−51	May 28	Sept. 19	27.59	85.5	167
hunder Bay	7.2	63.5	104	−42	June 1	Sept. 8	29.40	84.6	144
rout Lake	−11.0	60.7	96	−54	June 10	Sept. 16	23.89	77.0	157
thern—									
ndon	22.9	69.6	106	−27	May 15	Oct. 6	37.19	72.5	164
tawa	12.6	69.2	102	−38	May 13	Sept. 28	33.55	86.1	152
arry Sound	16.3	67.5	100	−39	May 11	Oct. 4	39.12	111.7	159
ronto	25.0	71.5	105	−27	May 9	Oct. 4	30.56	54.9	137
indsor	25.5	71.8	101	−15	Apr. 30	Oct. 18	32.61	38.0	137
rie Provinces—									
itoba—									
hurchill	−17.5	53.6	96	−57	June 25	Sept. 12	15.99	69.1	143
ne Pas	−7.0	64.8	100	−54	May 30	Sept. 20	17.76	54.7	127
innipeg	0.1	68.3	108	−54	May 26	Sept. 19	20.35	51.3	125
katchewan—									
egina	1.6	66.7	111	−56	May 29	Sept. 14	15.53	43.0	115
skatoon	1.0	66.6	104	−55	May 27	Sept. 7	13.86	43.2	104
wift Current	8.9	66.9	107	−54	May 30	Sept. 22	15.27	44.4	114
erta—									
eaverlodge	7.4	60.2	98	−54	May 23	Sept. 8	17.91	68.1	127
algary	14.2	62.0	97	−49	May 27	Sept. 11	17.44	58.5	116
dmonton	6.6	63.1	99	−57	May 27	Sept. 19	18.64	53.8	121
edicine Hat	12.1	69.1	108	−51	May 14	Sept. 20	14.29	48.7	93

[1] Total rainfall and one tenth of the total snowfall.

8.—Temperature and Precipitation Data for Typical Stations in the Various Districts
—concluded

District and Station	Temperatures (Fahrenheit)						Precipitation		
	Mean Jan.	Mean July	Highest on Record	Lowest on Record	Av. Dates of Freezing Temperatures (32°F or Lower)		Total (All Forms)[1]	Snowfall	Av. Number of Days (All Forms
					Last in Spring	First in Autumn			
							in.	in.	
British Columbia—									
Pacific Coast and Coastal Valleys—									
Estevan Point	40.4	56.6	84	7	Apr. 3	Nov. 15	115.39	10.7	201
Langara	37.1	54.4	78	6	Apr. 1	Nov. 28	66.39	24.3	252
Prince Rupert	35.2	56.2	90	−6	Apr. 20	Nov. 6	94.41	32.7	230
Vancouver	37.2	63.8	92	0	Apr. 2	Oct. 28	41.12	17.8	159
Victoria	39.4	60.1	95	6	Feb. 28	Dec. 8	27.41	11.5	143
Southern Interior—									
Glacier	13.5	57.9	98	−32	June 10	Sept. 8	57.10	370.2	192
Kamloops	21.4	69.6	103	−32	May 4	Sept. 26	9.71	32.5	87
Penticton	27.4	68.4	105	−16	May 10	Sept. 29	12.08	25.5	101
Princeton	17.9	63.4	107	−49	June 4	Sept. 13	14.17	58.5	117
Central Interior—									
Barkerville	15.4	54.4	96	−52	June 29	Aug. 16	45.25	226.1	185
McBride	16.0	60.5	100	−50	June 14	Aug. 26	21.31	84.3	127
Prince George	11.6	58.9	94	−58	June 13	Aug. 24	24.67	79.6	162
Smithers	14.9	57.5	93	−47	June 23	Aug. 19	20.27	73.3	157
Northern Interior—									
Atlin	8.6	53.5	87	−54	June 7	Sept. 2	10.95	43.4	70
Dease Lake	−2.3	55.1	93	−60	July 1	Aug. 16	15.25	65.8	144
Fort Nelson	−8.4	62.2	98	−61	May 25	Sept. 3	17.13	67.7	125
Fort St. John	4.2	61.1	92	−53	May 19	Sept. 8	17.42	76.0	131
Smith River	−11.4	57.3	92	−74	June 24	Aug. 11	18.28	79.9	147
Yukon Territory—									
Dawson	−17.6	59.8	95	−73	June 1	Aug. 23	12.67	49.9	115
Snag	−18.5	57.0	89	−81	June 15	Aug. 8	14.07	53.2	114
Watson Lake	−11.5	59.1	93	−74	May 29	Sept. 2	16.98	82.5	149
Whitehorse	−0.6	57.5	91	−62	June 3	Aug. 30	10.05	45.6	116
Northwest Territories—									
Mackenzie Basin—									
Fort Good Hope	−22.0	60.5	95	−69	June 11	Aug. 8	10.52	46.3	97
Fort Simpson	−15.8	62.0	97	−69	June 2	Aug. 31	12.92	47.9	118
Hay River	−12.2	59.8	96	−62	June 8	Sept. 11	12.59	53.3	99
Barrens—									
Baker Lake	−27.2	51.3	82	−58	June 27	Aug. 28	8.21	22.9	95
Chesterfield	−24.8	47.9	86	−60	June 28	Sept. 7	10.96	46.5	98
Coppermine	−19.4	48.7	90	−58	June 26	Aug. 20	9.22	44.3	114
Arctic Archipelago—									
Clyde	−16.6	40.6	71	−50	July 13	July 18	8.07	57.5	87
Eureka	−34.0	42.4	67	−63	June 25	Aug. 5	2.40	14.0	48
Frobisher Bay	−15.7	46.2	76	−49	June 26	Aug. 30	14.99	80.5	129
Mould Bay	−28.4	38.8	60	−63	July 12	July 18	3.17	18.7	74
Resolute	−26.3	40.3	65	−61	July 11	July 20	5.36	28.8	95

[1] Total rainfall and one tenth of the total snowfall.

Subsection 2.—Canadian Meteorological Service

The Canadian Meteorological Service, which reports to the Deputy Minister of Tran port, provides meteorological services designed to meet civil requirements throughou Canada consistent with government responsibility and assigned resources. These servic are largely organized and provided on a regional basis with offices located at Vancouve Edmonton, Winnipeg, Toronto, Montreal and Moncton. Each region operates sever categories of offices with assigned levels of responsibility for the provision of weather service Main weather offices are located at major centres across Canada. Each serves an ar about the size of a large province, providing weather services to the general public a

dditional specialized services to groups and agencies concerned with aviation, water esources, forestry, agriculture, road and rail transportation, construction and marine ctivities.

Because weather services are designed to meet the special needs of each group, they re as varied as the functions of the consumers. In general, they fall into about three ategories. First, current data representing the latest observations of the local weather aken at official observing sites across the country are made available and meet many of he needs of both the public and the economy. Hourly readings of temperature, humidity, loud cover, precipitation and wind speed and direction are of interest to some, are of concern o others and, at times, are vital to such activities as aviation, flood forecasting, shipping, now removal and recreation. Daily values of temperature extremes and precipitation mounts are likewise of use to others.

Secondly, short-range and medium-range forecasts are provided for certain areas and or specific locations, such as aerodromes, canals, fruit and vegetable growing areas and arge urban centres. The forecasts for the general public are issued by the main weather ffices and are distributed across Canada by relay to the radio and TV stations and to the ress, and by commercial communication channels.

A third service has to do with technical applications using historical and statistical eather data. All observed weather data are processed and stored to provide a historical ecord of the Canadian climate. These data are analyzed, quality-controlled and published n a variety of forms and may be applied to the special problems of agriculture, forestry, ater resources, and other areas of Canadian activity. Advisory services are available at ost weather offices so that each inquirer may receive the information needed in the form est suited to his needs; services of meteorological specialists are available at Toronto Headquarters and at some weather offices. Special analytical projects are occasionally ndertaken requiring computer analysis of archived data at Meteorological Service Headuarters in Toronto to provide advice to industry, science and government. Although orecasts are issued only at the main weather offices, secondary weather offices staffed by rained presentation technicians are supplied with sufficient information via the meteoroogical communication network to enable them to meet a wide range of localized inquiry. Requests for services at a number of secondary offices are such that a professional meteoologist is on staff to provide consultation-type service.

There are now 11 main weather offices and 35 secondary weather offices in the Canadian Meteorological Service system. In addition, local meteorological services are available rom Canadian Forces Weather Offices at Department of National Defence bases across he country by means of co-operative arrangements with the Ministry of Transport.

A developing trend in the organization of meteorological services is the establishment of Scientific Support Services group within Regional Meteorological Offices, which is capable f examining in detail meteorological influences on the activities of major sectors of the economy and of developing specialized services that might be required, taking into account he geographical and topographical features of the area concerned. For example, in British Columbia, mutually beneficial co-ordination and co-operation have resulted in rrangements between provincial authorities and the Regional Office in Vancouver for programs of considerable provincial importance, including the establishment of rain and now gauge networks for hydrology studies, support for the Columbia River control system, provision of forest fire danger and slash-burning forecasts, and the provision of a frostarning service for the fruit growing areas of the interior.

Weather Observing Stations.—Several networks of weather observing stations provide the information that forms the basis for the forecasts and advisory service and for the climatological and technical services referred to above. In January 1970, official meteorological observations were taken and recorded at 2,336 weather reporting stations n Canada. There are several classes of stations, ranging from 207 first order reporting stations, mainly at aerodromes, where hourly observations of all aspects of the weather are

recorded, to the 2,000 co-operative observing stations where volunteer observers make daily observations of rainfall, snowfall and temperature. Although there are vast areas of the country where the weather observing stations are several hundred miles apart, the weather in the settled parts of the country is recorded hourly at first order reporting stations every 100 miles or so and daily at co-operative climatological stations about 25 miles apart.

Some first order weather stations do not report hourly but make complete weather observations every six hours. All hourly and six-hourly reports prepared in a special number code are relayed almost instantaneously by the meteorological communications network to all weather offices across the country and are dispatched at high speed to other countries requiring Canadian observations. At the end of the month, all weather observing stations send their official observation report forms to a regional collection office, from which they are sent to Meteorological Service Headquarters for final quality control, processing and publication. These data become part of the climatological archives and serve as a permanent record of Canadian weather. The observing personnel at most of these stations are Ministry of Transport employees and Canadian Forces personnel, and the remainder are employed by agencies or are individuals working under contract with the Ministry or through a co-operative arrangement by which various transportation and communication companies take observations in return for special services.

Twice daily, at over 30 locations throughout the country, upper air observations are made from ground level to altitudes up to 100,000 feet. Pressure, temperature and humidity measurements are made automatically by radiosonde instruments carried aloft by balloons and this information is relayed by a system of radio signals to ground receiving stations. The wind directions and speeds aloft are determined by measuring the drift of the balloon and attached radiosonde instruments using radar or radio direction equipment. The upper air observations, like those of the surface weather, are distributed rapidly to weather offices, and at the end of the month summary report forms are sent to Meteorological Service Headquarters where the data are quality-controlled, processed, published and archived.

There are more than 2,000 climatological observing stations in Canada where observers record the precipitation and temperature extremes and send their climatological reports on monthly data sheets to Regional Data Collection Centres and then to Headquarters. Most of the observers serve on a voluntary basis and willingly spend several hours a month on this useful hobby. In addition, many governmental and industrial organizations have incorporated brief climatological duties into the general work program of selected employees. The number of weather observing stations has been growing at an average rate of more than 100 a year for the past decade, and thus a steadily increasing historical record of Canadian weather is available to assist Canadians in all economic pursuits. These data are frequently used in investigations of agricultural potential and irrigation, hydro-electric, industrial and other problems of a wide variety.

Meteorological Communications.—The meteorological communications system is the lifeline that provides the flow of information essential to a reliable weather information service. Since weather conditions are constantly changing, the value of reports of weather observations falls off rapidly and the time between the taking of the observation and its relay to the public or use in a forecast must be kept as short as possible. For a country the size of Canada with many sparsely settled areas, rapid communication presents difficult problems and requires unique solutions.

Weather offices and weather stations are linked coast-to-coast by land-line teletype and, in remote northern areas, by radio or radio teletype. The land-line teletype circuits are leased from commercial wire companies and operated by the Meteorological Service; most of the radio circuits are operated by the Telecommunications and Electronics Branch of the Ministry of Transport. When conversion to computer operation of the entire system is completed (in 1970), relay of all weather data will be controlled by a centrally located computer in Toronto.

In addition to the foregoing, two long-line weather facsimile networks transmit informa-n in the form of weather charts, from central forecast offices to weather offices from ast to coast and into the northern and ocean areas by radio facsimile. Icebreakers and her ships equipped with receivers thus have the latest weather charts regularly available guidance in their operations.

The Meteorological Service operates 57,100 miles of teletype circuit serving 382 stations th 741 facility connections, and the meteorological facsimile system serves 101 stations uipped with 132 connections and uses 18,400 miles of network circuits.

Specialized Services.—Although weather services are organized on a regional basis, rtain specialized services can be most economically provided from a central location. ch a service is the ice reconnaissance and forecasting program to support marine activity ice-congested waters; the program is directed from Toronto and the Ice Forecast Centre located in Halifax. Specially equipped aircraft are used in the aerial phase of the program d ice charts can be passed from the aircraft directly to icebreakers via radio facsimile. her phases of the program are the provision of valuable supplemental data from ship-ard ice observers assigned to eight Canadian Coast Guard icebreakers, and the operation 120 ice reporting shore stations and 60 weekly reporting stations where ice thickness is easured. Forecast ice charts are also dispatched via facsimile circuits and mailed to a de variety of personnel and organizations having need of this information.

Providing another specialized service, the Climatology Division at Meteorological rvice Headquarters in Toronto, using the unique capabilities of a computer and large nks of weather data which have been quality-controlled and stored so that they are ailable for rapid access by computer, is able to provide statistical material of a highly phisticated nature. These computer-produced climatological data allow the full range relevant historic weather information to be applied to an increasingly wide variety of oblems in which human, economic and physical activities and their weather-sensitive ctors are being examined. In addition, hydrometeorological specialists are responsible meteorological studies in support of water resources activities involving the rivers, servoirs and lakes of Canada. Such studies include the provision of criteria for the proper sign and operation of water-control structures, techniques for use in lake level, river flow d flood forecasting, and assistance in water supply and pollution investigations.

The scientific and technical orientation of modern life have evolved, in part, because ople are unwilling to accept the apparent vagaries of weather—the unexpected occurrence frost, flood, blizzard and storms at sea—without applying scientific and technical knowl-ge toward an understanding of the weather as a major environmental influence. People sh to be forewarned so that precautions can be taken and hardships mitigated. They e able to establish and successfully operate warning and protective procedures employing ergency systems and backup facilities, and to direct or adjust operations to save life d protect property from high wind, extreme cold, frost, flood and storm.

Research and Development.—The extent to which modern meteorological science n aid in providing better services has been only partially explored. At Meteorological rvice Headquarters in Toronto, research and development work is a continuing activity th changing priorities as a constant search is made for better forecasting techniques and improvements in the day-to-day meteorological services. Current research in this ld is discussed in some detail in Chapter VIII on Scientific and Industrial Research.

World Meteorology.—Canada has always co-operated with other nations in the change of weather data and other important matters relating to international meteo-ogy. A major area of international co-operation is with the United States Weather reau which is now a part of Environmental Science Services Administration (ESSA). e two national meteorological organizations exchange data freely. Co-operative arrange-nts are also made for the use by Canada of data processed by the large ESSA computer cilities in Washington. Other agreements cover the marine forecasting program on the

Great Lakes relating to standardization of methods of ship observations, criteria for issuin weather warnings and other similar matters. Especially noteworthy is the long-standin joint Canadian–United States venture begun in 1947, operating five high Arctic weathe stations at Resolute, Eureka, Mould Bay, Isachsen and Alert; the latter is the most north erly inhabited station in the world. In addition to their primary function of taking an recording surface and upper air weather observations, these stations are of great importanc as advance bases for arctic scientific studies, polar explorations, and economic activitie such as oil exploration.

The air that circles the earth is an international resource. Research studies of th atmosphere and the prediction of weather elements require global surface and upper ai observation networks, the international exchange of data via modern high-speed com munications links, and the broadscale processing of data by computers.

World meteorology is highly organized on a global basis through the World Meteo rological Organization (WMO) with headquarters in Geneva and a participating member ship of 132 states and territories. Canada is an active member of this world organizatio and fully supports its many goals. A major portion of the WMO technical program is no devoted to the World Weather Watch (WWW)—a worldwide plan for upgrading an modernizing meteorological observing networks and national weather services.

The unprecedented opportunities afforded by the development of earth-orbiting meteo rological satellites and the availability of high-speed electronic computers are being exam ined in depth and both developed and developing countries are co-operating fully so tha all member states of the WMO will derive full benefits from modern technology and, in turn will have improved meteorological services.

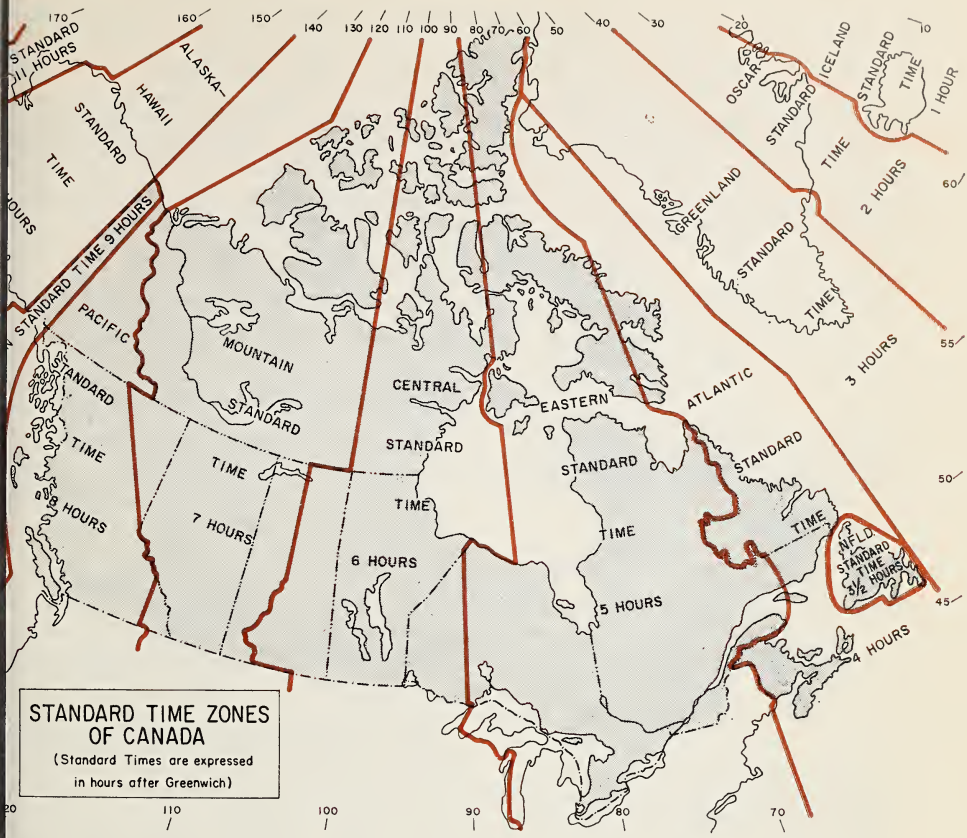
Subsection 3.—Standard Time and Time Zones

The rotation of the earth on its axis was considered at one time to be entirely uniform and the unit of time, which is the second, was defined as 1/86400 of the mean solar day Improvements in clocks and in the methods of making astronomical observations demon strated conclusively that there are irregularities in earth rotation too large to be neglected So, in 1957 the International Committee on Weights and Measures defined the second i terms of the annual motion of the earth about the sun, called ephemeris time. Also i 1957 the first caesium atomic clock was calibrated with respect to ephemeris time, but no until 1968 was the caesium second adopted as the international standard. The secon today is defined as 9,192,631,770 cycles of a transition of the caesium atom.

Atomic timekeepers, with a precision of a millionth of a second a day, control Canada' time service. The same is true of CHU (3330 kHz, 7335 kHz, 14670 kHz), the continuou broadcast of Canadian time which contains a bilingual voice announcement of time eac minute.

Standard Time, which was adopted at a World Conference held at Washington, D.C. in 1884, sets the number of time zones in the world at 24, each zone ideally extending ove one twenty-fourth of the surface of the earth and including all the territory between tw meridians 15° of longitude apart. In practice, the zone boundaries are quite irregular fo geographic and political reasons. Universal Time (UT) is the time of the zone centre on the zero meridian through Greenwich. Each of the other time zones is a definite numbe of hours ahead of or behind UT to a total of 12 hours, at which limit the international dat line runs roughly north-south through the mid-Pacific.

Canada has seven time zones, the most easterly being Newfoundland Standard Time three hours and thirty minutes behind UT and the most westerly Yukon (west) Standar Time, nine hours behind UT. In between, from east to west, the remaining zones ar called Atlantic, Eastern, Central, Mountain, Pacific and Yukon (east). Yukon (east) an Pacific Standard in effect constitute a single zone.



Legal Authority for the Time Zones.—Time in Canada has been considered a matter of provincial rather than federal jurisdiction. Each of the provinces and the North-West Territories has enacted laws governing the standard time to be used within its boundaries. These laws determine the location of the time zone boundaries. Lines of communication, however, have sometimes caused communities near the boundary of a time zone to adopt the time of the adjacent zone, and in most cases these changes are acknowledged by amendments to provincial legislation. During the two World Wars, there were federal enactments concerning time but these were of temporary duration. In 1941 the Dominion Observatory time was declared the time to be used for official purposes in Canada.

Daylight Saving Time.—Although Daylight Saving Time had been urged in many quarters before World War I, its first use in Canada came as a federal war measure in 1918. Today most of the provinces have legislation controlling the provincial or municipal adoption (or rejection) of Daylight Saving Time; in the other provinces the authority is left to the municipalities. By general agreement, Daylight Saving is in force for six months from the last Sunday in April to the last Sunday in October.

Section 6.—Public Lands

Subsection 1.—Federal and Provincial Public Lands

The total area of Canada and the areas of the individual provinces and territories ar classified by tenure in Table 9. All lands, with the exception of those privately owned or i process of alienation, are Crown lands under the jurisdiction of either the federal or th provincial governments. In the table, items 2, 3, 4 and 5 are obtained from Federa Government sources and items 1, 6, 7 and 8 from provincial government sources.

9.—Total Area classified by Tenure (circa) 1969

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.
	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. mile
1. Privately owned land or land in process of alienation from the Crown	6,817	2,051	15,762	15,425	43,500	45,20
2. Federal Crown lands other than national parks, Indian reserves and forest experiment stations [1]	55	69	171	592	631 [2]	1,08
3. National parks	153	7	514	79	[3]	1
4. Indian settlements	—	4	40	59	185	2,40
5. Federal forest experiment stations	—	—	—	35	7	3
6. Provincial lands other than provincial parks and provincial forests	148,936	43	4,924	11,077	469,059	348,80
7. Provincial parks	107	4	14	9	75,000	15,03
8. Provincial forests	117	6	—	1,078	6,478	[4]
Totals	**156,185**	**2,184**	**21,425**	**28,354**	**594,860**	**412,58**

Item	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Canada
	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. mile
1. Privately owned land or land in process of alienation from the Crown	53,413	106,084	99,268	20,558	93	408,17
2. Federal Crown lands other than national parks, Indian reserves and forest experiment stations [1]	1,117	3,200	2,668	498	1,508,213 [5]	1,518,30
3. National parks	1,148	1,496	20,692 [6]	1,671	3,650 [7]	29,42
4. Indian settlements	846	1,964	2,512	1,320	11	9,34
5. Federal forest experiment stations	26	—	23	—	12	14
6. Provincial lands other than provincial parks and provincial forests	185,845	17,205	118,507	251,710	—	1,556,11
7. Provincial parks	3,190	1,803	2,348	10,120	—	107,62
8. Provincial forests	5,415	119,948	9,267	80,378	—	222,68
Totals	**251,000**	**251,700**	**255,285**	**366,255**	**1,511,979**	**3,851,80**

[1] Includes leased land, which is, however, a minor portion of the total. [2] Includes Gatineau Park (137. sq. miles) and Quebec Battlefields Park (0.36 sq. mile) which are under federal jurisdiction but are not technicall national parks. [3] Less than one square mile. [4] Included in item 6. [5] Includes 952,849 sq. mile set aside by Order in Council as native game preserves in which only Indians and Eskimos may hunt, but which ar not regarded as national parks. [6] Includes that part of Wood Buffalo Park in Alberta (13,650 sq. miles) [7] That part of Wood Buffalo Park in N.W.T.

Federal Public Lands.—Public lands under the administration of the Federa Government comprise lands in the Northwest Territories including the Arctic Archipelag and the islands in Hudson Strait, Hudson Bay and James Bay, lands in Yukon Territory ordnance and admiralty lands, national parks and national historic parks and sites, fores experiment stations, experimental farms, Indian reserves and, in general, all public land held by the several departments of the Federal Government for various purposes connecte with federal administration (see Table 9). These lands are administered under the Terri torial Lands Act (RSC 1952, c. 263) and the Public Lands Grants Act (RSC 1952, c. 224 which became effective June 1, 1950 and replaced previous legislation.

The largest areas under federal jurisdiction are in the Northwest Territories and kon Territory where only 93 sq. miles of a total area of 1,511,979 sq. miles are privately ned. This part of the national domain, with the exception of the islands in Hudson y and James Bay, is all north of the 60th parallel of latitude and occupies about 40 p.c. the surface of Canada. It is under the administration of the Department of Indian airs and Northern Development.*

Provincial Public Lands.—Public lands of Nova Scotia, New Brunswick, Quebec, tario and British Columbia (except the Railway Belt and Peace River Block) have been ministered since Confederation by the provincial governments. In 1930 the Federal vernment transferred the unalienated portions of the natural resources of Manitoba, skatchewan and Alberta and of sections of British Columbia to the respective governnts, and all unalienated lands in the Province of Newfoundland, except those administred by the Federal Government, became provincial public lands under the Terms of ion on Mar. 31, 1949. All land in the Province of Prince Edward Island has been enated except 133 sq. miles under federal or provincial administration.

Information regarding provincial public lands may be obtained from the respective vinces. (See the Directory of Sources of Official Information, Chapter XXVII, under ands and Land Settlement".)

Subsection 2.—National Parks

Canada's national parks are the result of the Federal Government's efforts to preserve tural areas of outstanding scenic and biological interest for the benefit of the public. e national park concept, which began with the establishment of Yellowstone National rk in the United States in 1872, was soon afterwards applied in Canada. In 1885, the nadian Government reserved from private ownership the hot mineral springs of Sulphur untain in what is now Banff National Park. Two years later, this 10-sq.-mile reserve s extended to 200 sq. miles and named Rocky Mountains Park, the first federal park in nada. In the same year, Queen Victoria Niagara Falls Park, the first provincial park, s established by the Ontario Government to protect the public's right to view the great tural wonder of Niagara Falls. Two land reserves in southern British Columbia—Yoho d Glacier—were made by the Federal Government in 1886, a reserve of 54 sq. miles in Waterton Lakes area of southern Alberta in 1895, and an area of 5,000 sq. miles around per, Alberta, in 1907. These four reserves, all in the western mountain ranges, together h Rocky Mountains Park, formed the nucleus of the national park system after the minion Forest Reserves and Parks Act was passed by Parliament in May 1911. Conrently, a distinct National Parks Branch was created in the Federal Government to tect, administer and develop the parks.

By 1930, nine more national parks had been established. Three of these were in tario and consisted of federally owned Crown land or land held in trust for Indians. e in Saskatchewan and one in Manitoba were former federal forest reserves. Wood ffalo National Park, a 17,300-sq.-mile area straddling the Alberta–Northwest Territories rder, was established as a refuge for the largest surviving herd of wood buffalo in North nerica. Elk Island National Park near Edmonton was also established as a preserve for ffalo, and Mount Revelstoke and Kootenay National Parks, scenic areas in southern itish Columbia, were established by agreement between the Federal and British Columbia vernments.

The parks added to the system since 1930 were set up with the co-operation of provincial vernments which made lands available for national park purposes. All public lands table for national parks are now under the administration of provincial and territorial

* Transfer of all lands around northern municipalities from federal to territorial control was begun in September . See Appendix I.

governments and a new national park usually is established by Act of Parliament after the land for it has been acquired by the provincial government and transferred, together with all its natural resources, to the Federal Government.

National parks are now under the jurisdiction of the Minister of Indian Affairs and Northern Development and are administered by the National and Historic Parks Branch under the National Parks Act, 1930 (RSC 1952, c. 189) and various park regulations. The purpose of the parks and the objectives of their management are set out in the Act, which dedicates the parks to the people of Canada for their "benefit, education and enjoyment" and states that they are to be maintained and used so as to leave them unimpaired for the enjoyment of future generations.

An important step in the evolution of national park administration was taken when all policies concerning the parks were reviewed, amended and consolidated in a statement that was approved by the Federal Government and announced in the House of Commons on Sept. 18, 1964. The main points of this policy statement, which will guide administration and provide objectives for planning and development, are:—

(1) National parks are established to preserve for all time the most outstanding and unique natural features of Canada for the benefit, education and enjoyment of Canadians as part of their natural heritage. They are dedicated forever to one use—to serve as sanctuaries of nature for rest, relaxation and enjoyment. No exploitation of resources for any other purpose is permitted. All development must contribute to public enjoyment and conservation of the parks in a natural condition.

(2) Zoning will be used to guide development and to preserve park values. Visitor services will be grouped generally into visitor service centres, a definition that applies to existing town sites.

(3) National parks cannot meet every recreational need; the most appropriate uses are those involving enjoyment of nature and activities and experiences related to the natural scene.

(4) The Federal Government assumes the cost of administration and protection in the parks and provides basic facilities for public use, such as roads, trails, campgrounds, picnic areas, nature interpretation and utilities. Other facilities beyond basic requirements, such as hotels, motels, restaurants, gas stations, stores and other special services, are provided by private enterprise.

(5) Park residents and businesses should be in the same economic position as those operating outside the national parks and this principle governs the approach to charges, rentals and fees. The users of special services such as swimming pools, marinas, golf courses and fully serviced campgrounds should pay the operation and maintenance costs of these publicly operated facilities. In general, permanent and seasonal residents should be limited to persons providing basic services to the park community.

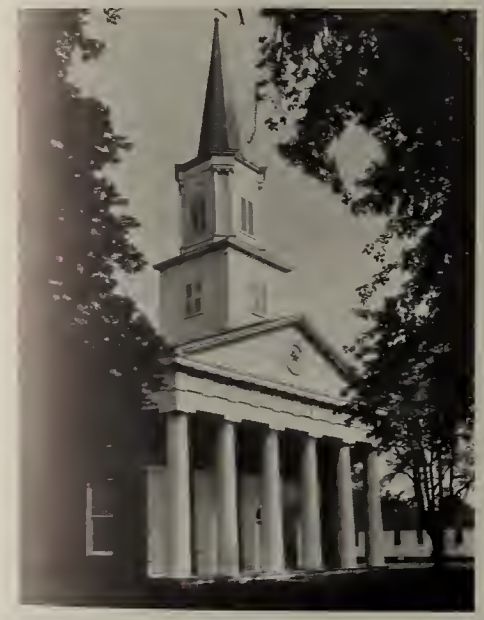
(6) All decisions affecting public development and the activities of private enterprise must be governed by the national interest as expressed by the National Parks Act.

In addition to the national parks, which preserve natural features, national historic parks and sites commemorate events of national importance and preserve historic landmarks or objects of historic, prehistoric or scientific interest that are of national importance.

Early historic parks were created in 1917 and 1918 and, by 1969, more than 300 monuments and some 600 plaques commemorating personages or events had been erected across the country. A site is declared of national historical significance by the Minister of Indian Affairs and Northern Development on the recommendation of the Historic Sites and Monuments Board of Canada, an advisory board whose members represent all provinces. In 1967, a National Historic Sites policy statement was approved by the Board, accepted by the Minister and tabled in the House of Commons for the information of Parliament. One

T -rkins house in Liverpaal, N.S., was built in 1762 ↑
c e pine in the simple New England style preferred
b, early Moritime settlers.

→
An eostword view over the raaftaps of the walled care of Quebec City shaws that the fine old buildings af that area, some dating back ta the 1700s, remain in use ond unchanged in appearance since their construction. The buildings an rue d'Auteuil in the faregraund are af later vintage, having been constructed abaut 1845.



←
St. Andrews Presbyterian Church in Niagara-an-the-Lake, Upper Conada's aldest cammunity, is a splendid example af Greek revival architecture. It was built in 1831, replacing an earlier church built in 1794.

→
The aldest surviving buildings in Vancauver are relatively madern structures. "The Banff" apartment hause was built abaut 1907 in what is naw the central areo af the city.

→
Same of the old, solid, Victarian-type brick hames built around the clase of the 19th century in Western Conado are worthy af preservation as representative of that stable ond prosperous era, as is this home in Indian Head, Sask., which is falling into disrepair.

←
This turretted brick hause, dated abaut 1900, is ane af many ance-elegant homes af that era still in use in Winnipeg, as indeed in many ather cities, bath east ond west.

he main points of that policy statement recognized the need for a comprehensive long-ge historic sites program, establishing proper thematic and regional priorities.

The national parks and national historic parks and sites are administered by a director, ee assistant directors and three regional directors who are responsible for operations in Western Region, the Central Region (Ontario and Quebec) and the Atlantic Region. ch regional director consults with the representatives of the staff components of the nch—Financial and Management, Personnel, National Parks Service, National Historic s Service, and Program Co-ordination and Property Management. A resident super-ndent manages each park and has the assistance of a staff of park wardens who protect park and its natural features and enforce park regulations; park naturalists who explain park to visitors and offer various educational services; and other administrative, main-ance, and visitor service personnel.

Each park is being developed to yield the recreational potential for which it is suited. htseeing, camping, fishing, hiking, photography and nature study are the most popular is of recreation common to the 19 parks now accessible to the public. There are pgrounds in each park; daily charges are $1.50, $2.00 or $2.50 a day, depending on the vices provided. Motor vehicles may enter parks in the Atlantic Provinces free of charge an admission fee, varying from 25 cents for a single entry to $2 for an annual licence good all parks, is payable on entering all parks in Western Canada and Point Pelee National k in Ontario; all fees are currently under review but, in line with the government's i-inflationary policies, no early fee increases are expected. Agreements in principle e been or are about to be reached with provincial governments for the establishment of itional national parks. The long-term aim is to add 40 to 60 new parks to the system the end of the century.

A rugged area of about 160 sq. miles, heavily wooded and dotted with sparkling lakes, is to be preserved as La Mauricie, Canada's 22nd and Quebec's 2nd national park. It is situated about 100 miles northeast of Montreal and will be open for its first visitors in late summer of 1971.

10.—Location, Year Established, Area and Characteristics of National Parks and of Nation Historic Parks and Sites

Park	Location	Year Estab-lished	Area	Characteristics
			sq. miles	
National Parks				
Terra Nova	On Bonavista Bay, Newfoundland, 160 miles north of St. John's.	1957	153.0	Maritime area, rocky headlands and fo ests, salt and freshwater sport fishin Serviced campground and cabin acco modation.
Prince Edward Island	North shore of Prince Edward Island.	1937	7.0	Strip 25 miles long on shores of Gulf St. Lawrence. Recreational area, fi bathing beaches. Accessible by hig way. Motel and cabin accommodatio Serviced and semi-serviced cam grounds.
Cape Breton Highlands	Northern part of Cape Breton Island, N.S.	1936	367.0	Rugged Atlantic coastline with mountai ous background. Fine seascapes. R creational opportunities. Hotel a cabin accommodation. Serviced a semi-serviced campgrounds.
Kejimkujik	In south-central Nova Scotia, about 40 miles north of Liverpool and 50 miles southeast of Digby.	1969	147.2	Inland park with many lakes and river Hiking, canoeing, semi-serviced cam ground, swimming, interpretation pr gram, picnic areas. Park contains hi toric Micmac Indian petroglyphs (ro carvings). Accessible by highway.
Fundy	On Bay of Fundy between Moncton and Saint John in New Brunswick.	1948	79.5	Delightful recreational area. Forest region, wildlife sanctuary, rugged terrai Cabin accommodation. Serviced an semi-serviced campgrounds. Summ recreation.
Georgian Bay Islands	In Georgian Bay, near Honey Harbour, Ontario.	1929	5.3	Recreational and camping area. Unusu geological formations on Flowerpot I land. Accessible by boat from nearb mainland points. Serviced and sem serviced campgrounds on Beausoleil I land. Picnic areas.
Point Pelee	On Lake Erie near Leamington in southwestern Ontario.	1918	6.0	Wildlife sanctuary. Remarkable beache marsh area, southern flora, nature trai Staging ground for migratory bird Accessible by highway. Serviced cam ground.
St. Lawrence Islands	In St. Lawrence River between Brockville and Kingston, Ont.	1914	1.2	Mainland area and 14 islands among th Thousand Islands. Recreational an camping area. Accessible by boat fro nearby mainland points along provinci highway. Serviced campground.
Riding Mountain	Southwestern Manitoba, west of Lake Manitoba.	1929	1,148.0	Wildlife sanctuary on summit of escar ment. Fine lakes. Accessible by hig way. Hotel and cabin accommodatio Serviced and semi-serviced campground Summer recreation. Skiing in winter.
Prince Albert	Central Saskatchewan, north of Prince Albert.	1927	1,496.0	Forested region dotted with lakes and i terlaced with streams. Summer r creational area. Accessible by highwa Hotel and cabin accommodation. Se viced and semi-serviced campgrounds.
Banff	Western Alberta, on east slope of Rockies, 65 miles from Calgary.	1885	2,564.0	Magnificent scenic mountain area; note resorts, Banff and Lake Louise. Miner hot springs. Summer and winter sport Accessible by rail and highway. Hot and cabin accommodation. Service and semi-serviced campgrounds.

–Location, Year Established, Area and Characteristics of National Parks and of National Historic Parks and Sites—continued

Park	Location	Year Established	Area	Characteristics
			sq. miles	
ational Parks— concluded				
Island	Central Alberta, near Edmonton.	1913	75.0	Fenced preserve containing large herd of buffalo; also deer, elk and moose. Popular summer recreational area. Accessible by highway. Cabin accommodation and serviced campground.
er	Western Alberta, on east slope of Rockies, 235 miles from Edmonton.	1907	4,200.0	Mountainous area and noted wildlife sanctuary. Majestic peaks, icefields, beautiful lakes and noted resort, Jasper. Mineral hot springs. Summer and winter sports. Accessible by rail and highway. Hotel and cabin accommodation. Serviced and semi-serviced campgrounds.
erton Lakes	SouthernAlberta,adjoining Glacier Park in Montana, U.S.A.	1895	203.0	Canadian section, Waterton–Glacier International Peace Park. Mountainous area with spectacular peaks and beautiful lakes. Accessible by highway. Hotel and cabin accommodation. Serviced and semi-serviced campgrounds.
ier	Southeastern British Columbia on summit of the Selkirk Range.	1886	521.0	Superb alpine region, towering peaks, glaciers and forests. Climbing, skiing, camping. Accessible by Trans-Canada Highway and railway. Visitor accommodation. Semi-serviced campgrounds.
tenay	Southeastern British Columbia on west slope of Rockies.	1920	543.0	Includes Vermilion–Sinclair section of Banff–Windermere Highway. Broad valleys, deep canyons, mineral hot springs. Hotel and cabin accommodation. Serviced and semi-serviced campgrounds.
nt Revelstoke	Southeastern British Columbia, on west slope of Selkirks.	1914	100.0	Rolling mountain-top plateau with colourful alpine meadows and mountain lakes. Championship ski runs and ski jump in winter. Campgrounds.
o	Eastern British Columbia, on west slope of Rockies.	1886	507.0	Lofty peaks, magnificent waterfalls, colourful lakes. Yoho and Kicking Horse Valleys. Accessible by rail and highway. Hotel and lodge accommodation. Serviced and semi-serviced campgrounds.
d Buffalo	Partly in Alberta and partly in Northwest Territories, between Athabasca and Slave Rivers.	1922	17,300 *Alta.*, *13,650* *N.W.T.*, *3,650*	Immense region of forests and open plains. Mainly a wildlife sanctuary. Home of largest remaining herds of plains bison and wood bison on the North American Continent. Accessible from Fort Smith, N.W.T.
ational Historic Parks and Sites			acres	
al Hill	St. John's, Nfld.	1956	243.2	Site of 1762 battle between French and British and of many fortifications. Marconi made first transatlantic wireless transmission here in 1901.
le Hill	Placentia, Nfld.	1968	59.1	Ruins of harbour fortifications begun by the French about 1664. Interpretation centre.
Amherst	Prince Edward Island, near Rocky Point.	1967	222.0	Remaining earthworks of British fort built after 1758.

10.—Location, Year Established, Area and Characteristics of National Parks and of Natior Historic Parks and Sites—continued

Park	Location	Year Estab-lished	Area	Characteristics
			acres	
National Historic Parks and Sites— continued				
Fortress of Louisbourg..	Cape Breton Island, N.S., 25 miles from Sydney.	1940	13,000	Walled town built by French 1720-1745 a demolished by British 1759. Be partially reconstructed. Archaeologi investigations in progress.
Fort Anne.....	Annapolis Royal, N.S.....	1917	31.0	Site of French fort first built about 16 1708, finally captured and occupied British in 1710. Museum and well-p served earthworks.
Alexander Graham Bell.	Baddeck, N.S.....	1969	21.0	Museum containing mechanical and do mentary records of research by the ventor.
Grand Pré.....	Grand Pré, N.S.....	1961	19.7	Commemorates the story of the Acadi and the New England Planters. M seum.
George Island.....	Halifax, N.S.....	[1]	12.5	Preserved harbour fortifications built 1870s.
Halifax Citadel.....	Halifax, N.S.....	1956	36.9	Fortress constructed in 1820s and in 185 Museum.
York Redoubt.....	Halifax, N.S.....	1969	187.5	Perimeter harbour defence installations use from 1793 to 1945.
Port Royal.....	Port Royal, N.S., eight miles from Annapolis Royal.	1940	19.4	Reconstruction of "Habitation", first fo built in 1605 by Champlain and DeMont
Fort Beauséjour.....	New Brunswick, near Sackville.	1926	72.0	Site of French fort erected in mid-170 Museum.
Fort Gaspéreau.....	Near Port Elgin, N.S.....	1923	2.0	Site of 1751 French fort.
Carleton Martello Tower.	Lancaster, N.B.....	1924	0.8	Harbour defence built during War of 181
St. Andrews Blockhouse	St. Andrews, N.B.....	1938	2.5	Built during War of 1812.
Cartier-Brébeuf Park..	Quebec, Que.....	1969	5.0	Possible wintering site of Jacques Cartie 1535-36.
Old walls around City of Quebec.....	Quebec, Que.....	..	...	Former Quebec City fortifications.
Fort Chambly.....	Chambly, Que.....	1940	3.5	Fort built by the English in 1709-11. M seum.
Fort Coteau.....	Coteau du Lac, Que.....	1929	9.5	Site of fort built in 1779.
Fort Lennox.....	Île aux Noix, Que., near St. Paul.	1940	210.0	Fort built by the French in 1759.
Sir Wilfrid Laurier's Birthplace.....	St. Lin, Que.....	1941	0.5	Period restoration relating to early life the famous Canadian Prime Minister.
Bellevue House.....	Kingston, Ont.....	1964	1.2	House lived in by Sir John A. Macdonal first Prime Minister of Canada, abo 1848.

[1] Not yet formally established.

-Location, Year Established, Area and Characteristics of National Parks and of National Historic Parks and Sites—concluded

Park	Location	Year Established	Area	Characteristics
			acres	
ational Historic arks and Sites— concluded				
Malden	Amherstburg, Ont.	1940	5.0	Site of defence post built in 1797-99. Museums.
St. Joseph	St. Joseph's Island near Sault Ste Marie, Ont.	1923	47.0	Most westerly British fort, built in 1796.
Wellington	Prescott, Ont.	1940	8.5	Military garrison 1812-66.
dside	Kitchener, Ont.	1954	10.2	Boyhood home of the Rt. Hon. William Lyon Mackenzie King, former Prime Minister of Canada.
Prince of Wales	Northern Manitoba, near Churchill.	1940	50.0	Ruins of fort built 1733-71 to secure control of Hudson Bay for England.
er Fort Garry	Manitoba, 20 miles north of Winnipeg.	1951	9.8	Stone-walled fort built by the Hudson's Bay Company between 1831 and 1839.
che Rectory	Near Duck Lake, Sask.	1954	7.0	On field of final battle of Northwest Rebellion, 1885. Only surviving building of that date.
Creek Memorial rk.	Near Rosthern, Sask.	[1]	39.0	Commemorates Northwest Rebellion of 1885.
Battleford	Saskatchewan, four miles south of North Battleford.	1951	36.7	North West Mounted Police post built in 1876. Museum.
Langley	Fort Langley, B.C.	1958	11.0	Partially restored trading post founded 1850. Colony of British Columbia proclaimed here 1858.
Rodd Hill	Esquimalt, B.C.	1962	44.4	Extensive nineteenth century stone and concrete coastal fortifications.
ce Grand Theatre	Dawson, Y.T.	1959	--	Reconstruction of theatre of Gold Rush days.
Keno	Dawson, Y.T.	1959	--	Preserved Yukon river-boat.
on Sternwheeler	Whitehorse, Y.T.	1959	--	Yukon river-boat of 1930 period.

[1] Not yet formally established.

Evidence of the increasing attraction of Canada's national parks and national historic ks and sites is the growing numbers of visitors as shown in Table **11**.

In addition to the national parks described in Table **10**, a 138-sq.-mile recreation area wn as Gatineau Park has been developed north of the cities of Ottawa and Hull. Al- ugh not designated as a national park, this area has been developed by the Federal vernment as part of the National Capital Region and is under the care of the National ital Commission. It is a wilderness area, extending northward from Hull for 35 miles. h 25 miles of parkway, magnificent lookouts, lakes, fishing streams, beaches, picnic s, camping sites and walking trails, the park is one of the finest recreation areas in ada and is enjoyed by well over 1,000,000 visitors each year.

11.—Visitors to National Parks and National Historic Parks and Sites, Years Ended Mar. 31, 1966-70

Park	1966	1967	1968	1969	1970[p]
	No.	No.	No.	No.	No.
National Parks					
Terra Nova	108,738	179,647	292,798	247,338	307,939
Prince Edward Island	967,372	1,130,773	769,970	1,345,799	1,288,350
Cape Breton Highlands	729,443	851,653	810,651	689,973	729,797
Kejimkujik	..	..	..	58,751	104,195
Fundy	679,406	753,310	518,249	632,092	632,19[illegible]
Georgian Bay Islands	8,361	10,438	14,927	24,706	36,016
Point Pelee	697,328	726,035	715,046	744,113	674,794
St. Lawrence Islands	60,330	122,304	149,580	102,830	150,758
Riding Mountain	687,959	738,724	731,172	759,967	777,84[illegible]
Prince Albert	152,256	146,624	156,864	137,928	138,39[illegible]
Banff	1,803,490	2,044,537	2,050,735	2,147,425	2,300,643
Elk Island	197,728	204,286	232,286	277,925	301,061
Jasper	522,658	595,164	652,186	834,748	1,092,21[illegible]
Waterton Lakes	393,426	487,589	503,729	516,112	472,85[illegible]
Glacier	767,206	917,264	885,947	871,672	861,040
Kootenay	638,812	722,743	684,519	637,589	825,90[illegible]
Mount Revelstoke	741,457	872,367	894,286	913,671	853,217
Yoho	689,313	864,454	855,224	912,940	843,731
Wood Buffalo	..	..	..	..	..
Totals, National Parks	**9,845,283**	**11,367,912**	**10,918,169**	**11,855,579**	**12,390,940**
National Historic Parks and Sites[1]					
Signal Hill	275,209	396,762	602,074	340,352	423,291
Castle Hill	..	..	..	7,965	17,569
Fort Amherst	22,576	26,076	33,618	50,595	52,717
Fort Anne	66,534	74,428	68,783	78,264	63,977
Fortress of Louisbourg	148,072	193,127	194,653	194,373	223,550
Halifax Citadel	213,878	328,386	533,152	664,375	763,430
Port Royal	42,699	46,458	39,504	54,459	54,783
Alexander Graham Bell	110,158	121,804	108,351	137,841	124,095
Grand Pré	62,848	73,192	54,975	75,668	69,218
Fort Beauséjour	49,087	53,299	59,094	70,160	77,155
Carleton Martello Tower	40,993	43,984	44,443	50,836	51,163
Prince of Wales Martello Tower	..	..	17,779	20,207	22,141
Fort Chambly	101,286	132,700	123,046	123,874	117,628
Fort Lennox	26,191	29,995	39,616	46,331	49,354
Fort Coteau	..	..	..	15,005	26,119
Sir Wilfrid Laurier's House	7,562	7,872	9,312	10,934	10,649
Fort Malden	52,670	64,025	68,432	73,270	68,218
Fort Wellington	40,917	60,495	76,799	58,880	70,036
Woodside	13,554	14,309	16,158	15,765	19,725
Bellevue House	..	..	29,052	18,937	22,900
Fort Prince of Wales	311	526	242	669	228
Lower Fort Garry	92,208	107,303	132,620	137,368	175,122
Fort Battleford	42,878	43,111	42,803	43,431	46,509
Batoche Rectory	8,869	9,580	12,994	13,336	12,420
Fort Langley	111,941	133,237	123,204	122,394	118,817
Fort Rodd Hill	36,614	58,810	79,051	106,422	109,878
Palace Grand Theatre	5,525	9,599	..	..	..
S.S. Keno	6,857	3,250	9,033	9,523	10,063
Totals, National Historic Parks and Sites	**1,579,437**	**2,032,328**	**2,518,788**	**2,541,234**	**2,800,765**
Grand Totals	**11,424,720**	**13,400,240**	**13,436,957**	**14,396,813**	**15,191,705**

[1] Sites for which visitor data are available.

Subsection 3.—Provincial Parks

Most of the provincial governments of Canada have established parks within their oundaries. Some of these, particularly in Quebec and Ontario, are wilderness areas set ide in order that some portions of the country might be retained in their natural state ithout change brought about by the hand of man. Most of them, however, are smaller reas of exceptional scenic or other interest which are easily accessible and are equipped r slated for future development as recreational parks with camping and picnic facilities. he more important parks in each province are mentioned briefly in the following para- raphs.

Newfoundland.—Altogether, 2,963 sq. miles of wilderness, reservations and park- nds in Newfoundland are administered by provincial government agencies. All but 07 sq. miles of that area are in two wilderness reserves designated as protected habitat r caribou and are administered by the Wildlife Division of the Department of Mines, griculture and Resources. The 107 sq. miles of developed and reserved public parkland re under the jurisdiction of the Provincial Parks Service of the same Department. Of that rea, 65 sq. miles are in 17 undeveloped park reservations and the remaining 42 sq. miles re in 36 provincial parks. Operation of these parks is directed toward the preservation of atural environment and most of them are located in wilderness areas, developed only for icnicking and camping. Regulations prohibit hunting and logging but sport fishing is ermitted. Attendance at the parks in 1969 reached a total of 1,192,050, almost 17 p.c. nore than in the previous year.

Prince Edward Island.—Twenty areas have been developed as provincial parks ncluding Strathgartney Park, a 40-acre tract of land on the Trans-Canada Highway be- ween Charlottetown and Borden, which is an excellent picnic site and campground with its ardwood groves, fresh spring water and beautiful view over the West River and the sur- ounding country; Lord Selkirk Park, an area of 30 acres at Eldon, is of historic interest n that it contains an old French cemetery and marks the spot on the shoreline where ord Selkirk landed; Brudenell River Park and Golf Course, comprising 296 acres at oseneath, has a considerable area of woodland and runs to the shore of the Brudenell iver; Jacques Cartier Park, an area of 18 acres at Kildare Beach four miles from Alberton, of historic significance as the place where Jacques Cartier first landed on Prince Edward sland; Green Park, 45 acres on the Trout River, is an attractive combination of land, rees and water and is also of interest as a historic shipbuilding centre; Cabot Park at Malpeque, named in honour of the famous explorer, John Cabot, is a 30-acre area with eautiful sandy beaches and an interesting museum; and several small parks have been eveloped or are under development. A fee of $3 is charged for serviced tent and trailer ites and of $2 for unserviced sites. The parks are maintained by the Department of ourist Development.

Nova Scotia.—A provincial park system is under development in Nova Scotia by the epartment of Lands and Forests, which will include a network of picnic parks accessible rom major highways for day use and a series of camping parks for overnight visitors. The eed is also recognized for acquisition and development of provincial beaches, particularly long the warm waters of Northumberland Strait. The major camping parks in use at he end of 1969 included Whycocomagh Park overlooking Bras d'Or Lake in Cape Breton; aurie and Porter's Lake Parks near Halifax; Caribou Park on Northumberland Strait; Wentworth Park in the Wentworth Valley; Smiley Park in the Annapolis Valley; Islands ark on the south shore; Mira River Park between Sydney and Louisbourg; Battery Park t St. Peters canal; Valleyview Park overlooking the Annapolis Valley; and Ellenwood ake Park in the southwest near Yarmouth. Several other camping parks and picnic parks ere in process of development.

The policy of the Department is to provide good basic facilities, leaving scope f private enterprise to offer more sophisticated items such as showers, etc. Use of the picr parks is free but there is a nightly charge of $1.50 in camping parks. Concessions are n permitted under present policy.

It is visualized that some 20 to 25 additional camping parks, 60 picnic parks and seve beach developments will be required in the near future to accommodate the ever-increasi demand for such recreational areas.

Nova Scotia's ve lands campsi ov looking Mina Ba Bay of Fundy, ne many such eas spots where holiday in th Mc times.

New Brunswick.—The New Brunswick provincial park system, which is administe by the Department of Natural Resources, includes 19 recreational parks ranging in s from 25 to 1,400 acres, 23 picnic parks, 11 camping parks and six beach parks. Most the park sites are located in rural areas, fairly evenly distributed throughout the provin and are adjacent to or easily accessible from main trunk roads. All parks contain tabl some form of toilet facility and a potable water supply but more elaborate facilities a available in the larger parks. No entrance fee is charged at any of the sites but a da camping fee of $2 to $2.50 is in effect at 25 of the larger parks. The Department a maintains two wildlife parks—at Magnetic Hill near Moncton and at McGraw Brook Highway 109—where various species of wildlife to be found in the province are display

In 1969, more than 3,300,000 persons visited the provincial parks, 158,000 of th campers; 75 p.c. of the campers using park sites came from outside the province and ab 40 p.c. of the day-use visitors were non-residents.

A five-year federal-provincial (ARDA) program of expansion and improvement park and campground facilities in the province has been completed; this included development of approximately 1,000 tent and trailer sites, accommodation for day-use beaches, forest and wildlife recreation areas, scenic lookouts, etc., land purchase, and p vision of special facilities where warranted by intensity of use, such as boats, ramps, doc canteens and playgrounds.

Quebec.—The Province of Quebec has set aside an exceedingly large proportion of its territory as parks for the purpose of conserving the natural resources and providing areas for open-air recreation. Its major parks extend over almost 75,000 sq. miles, which amounts to about 12 p.c. of the area of the province and, excluding James Bay Park, covers nearly 20 p.c. of the forest area south of the 52nd parallel.

In all, there are 27 major parks, the oldest of which are Mont Tremblant Park dating back to 1894 and Laurentide Park to 1895. Mont Tremblant Park, an area of 990 sq. miles, is located 80 miles north of Montreal and is situated within one of the most extensively used summer and winter recreational areas of the province. The first concern in the establishment of Laurentide Park, an area of 4,059 sq. miles lying 30 miles north of Quebec City, was the conservation of the caribou, then in danger of dying out. Unfortunately, the protection afforded was not sufficient to preserve these animals but they have recently been re-introduced into the park area with more success. Gaspé Park, an area of 498 sq. miles, was established in 1937 also for the purpose of protecting the caribou and there a herd can now be found on Mont Albert. La Vérendrye Park, a 5,257-sq. mile wilderness area 140 miles northwest of Montreal, was created in 1939 as the Mont Laurier–Senneterre Highway Fish and Game Reserve and was renamed in 1950 to honour the illustrious Canadian explorer, Pierre Gaultier de Varennes, sieur de La Vérendrye, who discovered the Rocky Mountains. Mont Orford Park, a smaller area of 15 sq. miles west of Sherbrooke in the Eastern Townships, was established in 1938 and has become a highly specialized regional recreation area, devoted principally to camping.

Since then, more than 20 parks have been created:—

Name and Year Established	*Area*
	sq. miles
Aiguebelle (1945)	100
Chibougamau (1946)	4,257
Port Daniel (1948)	12
Mistassini (1948)	13,123
Shickshocks (1949)	316
Kipawa (1950)	1,090
Chicoutimi (1959)	678
James Bay (1960)	23,823
Assinica (1961)	3,712
Baie Comeau–Hauterive (1961)	2,170
Rimouski (1962)	299
Matane (1962)	417

Name and Year Established	*Area*
	sq. miles
St. Maurice (1963)	617
Labrieville (1964)	165
Causapscal (1964)	146
Papineau (1965)	250
Port Cartier–Sept Îles (1965)	3,250
Upper St. Maurice Valley (1965)	6,673
Portneuf (1967)	292
Pontiac (1967)	538
Chute St. Philippe (1967)	46
Cap Chat (1968)	47
Forestville (1968)	503

Perhaps the most popular activity in Quebec parks is fishing. Until very recently, hunting was generally prohibited but since 1962 a controlled moose hunt, authorized as a wildlife-management technique, has been permitted for Quebec residents only in Laurentide, La Vérendrye, Shickshocks, Matane, Portneuf, St. Maurice, Upper St. Maurice Valley and Pontiac Parks. Hunting is also permitted in Rimouski Park under certain conditions.

A number of rivers have been set aside by the Quebec Government as fishing reserves for public use, particularly for salmon fishing. These include the St. Jean, Petite Cascapédia, Matapédia, Ste. Anne, Cap Chat and Matane Rivers in the Gaspé area, the Moisie and Laval Rivers along the north shore of the St. Lawrence, and the Petit Saguenay, a tributary of the Saguenay River.

The Parks Branch of the Department of Tourism, Fish and Game has recently added to the number of campsites in the province to meet the growing popularity of that form of recreation, supplementing the network of privately operated sites. In the eastern portion of the province, provincial campsites are located at Cap Bon Ami, Carleton, Port Daniel, Moisie, Mont St. Pierre, Percé and Trois Pistoles. Camping areas closer to Quebec City include St. Alexandre (Kamouraska), Montmagny, St. Jean (Île d'Orléans), Stoneham, Villeneuve, Vincennes (Beaumont), St. Camille (Bellechasse) and St. Joseph de Beauce. Those in the general area of Montreal are Mont Orford, des Voltigeurs (Drummondville), Waterloo, Côte Ste. Catherine, Paul Sauvé (Oka), Dollard des Ormeaux, and Pointe des Cascades.

A recent innovation in a number of parks has been the marking of trails and the settin up of other facilities for the use of snowmobile enthusiasts, enabling them to enjoy in safet the natural beauty of the surroundings. During the 1969-70 winter season, such facilitie were provided at Rimouski, Laurentide, Chibougamau, St. Maurice, Mont Tremblant an Dollard des Ormeaux Parks and at Paul Sauvé Park at Oka and Darwin Falls at Rawdo

Ontario.—In 1969 there were 97 provincial parks available for public use in Ontari and several new parks were in process of development; 78 other areas, comprising 1,937 s miles, were held in reserve for future development. The total area of the Ontario provinci park system was about 15,030 sq. miles.

The seven largest parks—Polar Bear, Algonquin, Quetico, Lake Superior, Missinaib Killarney and Sibley—together have an area of about 12,724 sq. miles. Polar Bear Pa is the largest in the system, occupying 7,000 sq. miles of Hudson Bay Lowland borderi Hudson and James Bays containing boreal forest, tundra and arctic flora and faun Algonquin Park is a beautiful area 2,910 sq. miles in extent, 180 miles north of Toronto an 105 miles west of Ottawa; it has 14 picnic and camping areas which are accessible by c from Highway 60 and offers particularly fine canoeing opportunities in its interior. Killa ney Park is accessible by Highway 637 from Highway 69 south of Sudbury. Quetico Par covering 1,750 sq. miles, is accessible by Highway 11 at the Dawson Trail Campgrou on French Lake and also by water by way of Basswood Lake in the south. Highway north from Sault Ste Marie gives access to Lake Superior Park, and Sibley Park may b reached by road from Highway 17 east from Thunder Bay. Missinaibi Park, 176 sq. mil in extent, surrounds Missinaibi Lake, 55 miles north of Chapleau. The lake is renowne for walleye fishing and is the site of an important Hudson Bay trading post.

In 1967 a new policy of park classification and parkland zoning was announced achieve a balanced park system and to establish a framework for positive and effecti development and management. Five park classes were established—primitive, natur environment or heritage, wild river, nature reserve, and recreation. Comparable zon within parks were also established—primitive, natural, historic, multiple use, and recreatio

Under the Wilderness Areas Act, which came into effect in 1959, 40 areas are no established. These areas, widely distributed across the province, vary in size, charact and significance, but all were established as being important for their historic, scientifi aesthetic or cultural values. The largest is a 938-sq.-mile block covering the Pukaskw area on the north shore of Lake Superior. Most other wilderness areas are one square mi or less in size.

With the establishment of the class of provincial parks known as nature reserve some areas that once were protected under the Wilderness Areas Act for their scientif values are being changed in law to be protected as nature reserves under the Provinci Parks Act. There are now six areas so protected, four of which were previously under t Wilderness Areas Act. All nature reserves will contain natural features and phenomer that are either unique or typical of the primitive or contemporary landscapes which t gether form the ecological mosaic of Ontario.

Ontario has made another advance in meeting the rising pressures for recreation space by applying the concept of the recreational reserve. The recently created Nor Georgian Bay Recreational Reserve covers 4,500 sq. miles of interesting country lyi generally between Algoma and Parry Sound on the north shore of Georgian Bay and i cluding the channel between Manitoulin Island and the mainland, the 30,000 Islands, t famous route of the voyageurs by way of the French River, the remaining shoreline of Lal Nipissing and the La Cloche Mountains. The Reserve is not a provincial park nor is it Wilderness Area but an area following a normal course of development which is alreac used extensively for recreation. The plan is, by guiding the evolution of the area, to reali its full potential as a recreational paradise serving all types of needs and co-existing with landscape of normal activity.

A new beach and camping area has recently been added to Killarney Park, which is situated on the northern shore of Georgian Bay south of Sudbury, and is one of Ontario's largest parks.

Ontario's vast lakeland areas make this province a vacation paradise and the number f park visitors increases year by year. Attendance in 1969 was 10,459,936 persons and ampers numbered 1,360,639. The charge for vehicle entry in 1969 was $1 a day or $10 year, and the camping charge was $2.50 a night which included vehicle entry. Picnic ables, fireplaces, fuelwood, tested drinking water and washrooms are provided at supervised ent and trailer campgrounds. Trailer sanitation stations are new additions in many parks. Campsites numbered approximately 18,039 in 1969.

Interpretative and naturalist programs are being continually expanded and such serv- ces as museums, outdoor exhibits, conducted trips, illustrated talks and labelled nature rails are available in many parks.

The parklands of Ontario are administered by the Parks Branch of the Department of Lands and Forests. Detailed information is contained in various brochures available on equest from the Department of Lands and Forests, Parliament Buildings, Toronto.

Manitoba.—The provincial parks system of Manitoba, administered by the Parks Branch of the Department of Tourism and Recreation, consists of four major classifications f outdoor recreation development: provincial parks, which are large area parks with a ariety of natural attractions suited to outdoor activities; recreation areas, the natural ttractions of which are modified to accommodate recreation activities of an intensive ature; waysides, which are located on most highways to enhance travel routes and provide ttractive rest stops; and heritage areas, which are areas of outstanding scenic beauty or ave natural, physical or historic features of special local interest.

There are ten provincial parks in Manitoba, six of which are well established, thr Centennial parks are under development and Hecla Island Provincial Park is in the pla ning stages. Birds Hill Provincial Park comprises 8,400 acres and an 80-acre man-mad lake within easy reach of the Manitoba capital. In south-central Manitoba, Spruce Woo Provincial Park is set in an area thriving with wildlife, woods and wildflowers along th valley of the Assiniboine River, and also features lookouts over the shifting sand dunes the Bald Head Hills, the province's only truly desert area. Near the western boundary the province, Asessippi Provincial Park is under development. It centres on the southe end of a 45-mile-long man-made lake now forming behind the Shellmouth Dam on th Assiniboine. The Shellmouth reservoir will provide for development of water-base facilities on a large scale for western Manitoba residents and visitors.

Hecla Island Provincial Park is the most recent addition to the parks system. Th park includes a group of islands of which Hecla is the largest and adds over 7,300 acres land and 140,000 acres of water area in the southern section of Lake Winnipeg. Grin stone Point, adjacent to Hecla Island Provincial Park, is also being developed as a recreati area in conjunction with the park. Hecla Island is at present connected to the mainla and Highway 8 with a regular ferry service, although it is planned to eventually replace t ferry with a causeway. Park developments will offer resort facilities for water spor hiking, snowmobiling, hunting and fishing and will include a marina and an interpreti centre. Hecla village is a historic Icelandic fishing site.

Manitoba provincial parks have a total area of about 3,200 sq. miles. In additio there are 41 recreation areas ranging in size from four to 2,364 acres, and more than roadside facilities. The park system contains 51 campgrounds. Hunting and fishi lodges are common and accommodation in some of the parks ranges from modern reso and motels to hotels and cabins. Golf, tennis, boating, swimming, fishing, riding a hiking facilities are available, as well as children's playgrounds. A major ski area a mazes of snowmobile trails provide for growing participation in winter outdoor activiti Over 100 commercial concessions operate within the parks system, offering a variety services ranging from restaurants to riding stables and marinas.

Rehabilitation and expansion of existing recreation areas are continuing in an effort provide new camping and improved day-use facilities. Development is continuing, t in the heritage-area program to preserve and interpret sites, large and small, illustrati the natural and human history of the province. Surveys have been conducted to stu potentials along the shorelines of Lake Winnipeg and Lake Manitoba and provide guida for future development of recreational facilities in Manitoba's interlake area.

Popularity of the Manitoba provincial parks and recreation areas is indicated by i pressive annual increases in the number of park visitors. In the three years ended Mar. 1970, the numbers were estimated at 1,871,000, 1,776,000 and 2,420,000, respectively. estimated 69,700 families and groups in tents, trailers and truck campers utilized cam ground facilities across the province in the 1969-70 fiscal year, an increase of 15,500 o the previous year. The admission fee to Manitoba's provincial parks is 50 cents a d or $3 for the season.

Saskatchewan.—Saskatchewan's 14 provincial parks, comprising 1,803 sq. miles recreation land, range from forested parklands in the midst of the sprawling prairie valley parks between the soft hillsides of the legendary Qu'Appelle and rugged northla settings. Each park offers camping, picnicking, boating and swimming facilities and variety of recreational activities. Eleven of the parks operate a supervised recreati program of regularly scheduled activities for all ages—arts and crafts, hikes along pa nature trails, social functions and numerous team sports. Moose Mountain boasts dignified split-fieldstone chalet and other modern cabin accommodation. Modern ca facilities are also found at Cypress Hills, Duck Mountain and Greenwater Parks. G courses are found at Cypress Hills, Moose Mountain and Duck Mountain Parks. Cypress Hills Park, with its unique forest cover of stately lodgepole pine and white spru

e found elk, antelope, deer, beaver, sharp-tailed grouse and quiet trout-stocked streams. Duck Mountain, Moose Mountain and Greenwater Parks, moose, elk and bear appear riously and deer and beaver are common to all, as are several varieties of grouse and many ecies of waterfowl and smaller land birds. Pike, pickerel and perch abound in almost all rk lakes and brook and rainbow trout are ardently sought in northern waters. Canoe utes and commercially operated fishing and hunting camps are found in the province's ree wilderness parks—La Ronge, Nipawin and Meadow Lake. Hundreds of roadside mp and picnic grounds are in operation. Four official campsites and several other camp- g areas dot the province's 406-mile stretch of Trans-Canada Highway. Here, campers d picnickers relax in picturesque settings, contrasting the flat prairie highway. Saskat- ewan operates 72 regional parks which, although designed primarily with local patrons mind, also attract large numbers of tourists.

Marked sites of historic interest number 143 and include the Touchwood Hills Hudson's ay Post, Cannington Manor and Wood Mountain Historic Parks.

Alberta.—The Province of Alberta has 46 provincial parks containing 199 sq. miles; 2, with a total area of approximately 172 sq. miles, are in use and continuing development. ypress Hills Provincial Park with an area of 78 sq. miles is the largest and is situated in e southeast portion of the province. Other parks are: Aspen Beach, Beauvais Lake, ig Hill Springs, Big Knife, Bow Valley, Bragg Creek, Chain Lakes, Crimson Lake, Cross ake, Dillberry Lake, Dinosaur, Entrance, Garner Lake, Gooseberry Lake, Gregoire Lake, ommy, Jarvis Bay, Kinbrook Island, Lac Cardinal, Lesser Slave Lake, Little Bow, ittle Fish Lake, Moose Lake, O'Brien, Park Lake, Pembina River, Pigeon Lake, Red odge, Rochon Sands, Saskatoon Island, Sir Winston Churchill, Taber, Thunder Lake, he Vermilion, Tillebrook Trans-Canada Campsite, Wabamun Lake, Williamson, Willow reek, Winagami Lake, Woolford and Writing-On-Stone. These parks are generally pro- ded with picnic, camping and playground facilities and are maintained by the Department Lands and Forests, Provincial Parks Division, primarily for the recreation and enjoyment residents and visitors. There is a park within easy reach of almost every town. The ost northerly park is Gregoire Lake, about 20 miles south of Fort McMurray and the uthernmost park is Writing-On-Stone which adjoins the Alberta–Montana border. lberta's provincial parks were visited by 4,385,130 tourists and vacationists between pr. 1 and Nov. 30, 1969.

In addition to the recreational parks, 25 sites have been established to mark and pre- rve locations of historical interest. They include: Athabasca Landing, Buckingham ouse, Bugnet Plantation, Coronation Boundary Marker, Early Man Site, Fort DeL'Isle, ort George, Fort Vermilion, Fort Victoria, Fort White Earth, Frog Lake Massacre, rizzly Bear Telegraph Station, Hay Lakes Telegraph Station, Head-Smashed-In Buffalo mp, Massacre Butte, Ribstones, Rocky Mountain House Fort, Standoff, Stephansson, welve Foot Davis, Shaw Woolen Mill, Rev. George McDougall's Death Site, McLeod ort, Indian Stone Pile, St. Joseph Industrial School and Old Women's Buffalo Jump.

Provided also for Albertans are the Willmore Wilderness Provincial Park which adjoins asper National Park in the north and extends along the British Columbia border, and wo wilderness areas established under the Forest Reserves Act in 1961. Willmore Wilder- ess Provincial Park has an area of 2,149 sq. miles, Siffleur Wilderness 159 sq. miles and hite Goat Wilderness 489 sq. miles. The Ghost River Wilderness area of 59 sq. miles as established under the Provincial Parks Act in 1967. The wilderness areas have been t aside to preserve as far as possible the natural scene and are neither subject to any devel- pment nor provided with roads. The wilderness areas are complemented by three natural eas established during 1968-69 in representative zones of the province—Kootenay Plains atural Area in the mountain region (13 sq. miles), Foothills Natural Area (160 acres), and arkland Natural Area (159.2 acres).

British Columbia.—There are 275 (175 developed) provincial parks in Brit Columbia, having a total area of about 10,120 sq. miles. These parks are classified A, B and C. Class A parks are intended to preserve outstanding natural, scenic historic features of the province for public recreation; they have a high degree of legislat protection against exploitation and alienation. Class B parks are also primarily for protection of natural attractions but other resource use may be permitted if it does unduly impair recreational values. Class C parks are intended primarily for the use local residents and are usually managed by local park boards. Nature Conserva Areas in any park are fully protected from resource development and are dedicated t variety of recreational uses. There are immense wilderness areas such as Tweedsm Park and Wells Gray Park and outstanding scenic and mountain reserves such as Gariba Mount Robson, Manning and Bowron Lake Parks. The formal gardens of Peace A

The quiet waters of B sh Columbia's Bowron Lake rk in their magnificent R cy Mountain setting are u x- celled for the enjoyment a tranquil holiday in the n.

ark are a monument to the goodwill between Canada and the United States. Vancouver sland has a chain of small forested parks that have achieved tremendous popularity with ourists; the best known are Little Qualicum Falls, Miracle Beach and Goldstream. The mous gold town of Barkerville has been restored and became the first Provincial Historic ark; Fort Steele in the East Kootenay area is also being restored to preserve another of ritish Columbia's pioneer settlements. Twelve marine parks with mooring facilities and mpsites have been developed on the islands of the Strait of Georgia for the benefit of ater-borne vacationers.

The popularity of British Columbia's parks, with their integrated campsites and icnic areas, is attested by the fact that about 7,024,000 park visits were recorded during 969; about 25 p.c. of the visitors were campers and the remainder day visitors. Records ow that Mount Seymour, Cultus Lake and Golden Ears Parks were the most widely used.

Subsection 4.—Ottawa, Canada's National Capital*

Canada's Capital, the City of Ottawa, lies in a magnificent natural setting, its hub on high limestone bluff on the south shore of the Ottawa River below the Chaudière Falls t a point where two major tributaries flow in—the placid Rideau from the south and the urbulent Gatineau from the north. Looking northward, the Gatineau Hills form a ackground for the towers of the modern city which, to the south, east and west, spreads ut over rolling land, once heavily forested. There is little record of native settlement in is area. The native tribes of the Ottawa Valley, the Algonkin people, were nomads nd were not given to building communities, but the river itself at this point was well ravelled by Indian bands. Champlain paused here on his way westward in 1613, calling he river "la grande rivière des Algomequins", and early English traders called it the Grand iver. "Ottawa" is the anglicized form of Outaouac or Outaouais, the name of a tribe f Indians from Lake Huron who traded with the French in the seventeenth century. hey carried their furs by this river and it became widely used by explorers, fur-traders nd missionaries, and later by lumbermen and settlers.

The first settlement in the area was started by Philemon Wright who, in 1800, came rom Woburn near Boston in Massachusetts with a few families and tradesmen and estab- shed a small thriving self-sufficient community on the north shore of the river in what is ow Hull. Taking advantage of Britain's need for squared timber, Wright ran the first aft of white pine to Quebec in 1806, fortuitously meeting England's need for an alternative ource of timber when Napoléon closed the Baltic timber trade, and thus started a great ndustry that remained the life-blood of the community for half a century.

Settlement on the south side of the river did not begin in earnest until a generation ater. The War of 1812 drew attention to the vulnerability of the line of communications long the St. Lawrence River linking Quebec City with the settlements in Upper Canada nd to the need for a secure alternative route. After many delays, a route to Kingston by ay of the Ottawa River and the Rideau and Cataraqui River systems was approved and n 1826 Lieutenant-Colonel John By of the Royal Engineers was sent to the Chaudière rea to build a canal from that point to Kingston. The next year two companies of Royal appers and Miners and a labour force, mainly Irish, of several thousand men began the onstruction. To Colonel By also goes the credit of planning the original townsite which as, in 1827, named Bytown in his honour. Where Ottawa's central area is today, the arl of Dalhousie, the then Governor-in-Chief, had wisely secured commanding ground for he Crown in 1823 and, adjacent to this, Colonel By laid out two settlements called Upper own and Lower Town, separated by part of the Crown lands called Barrack Hill. The anal was completed in 1832 and Bytown began to grow and prosper. Stores, factories, anks, churches and schools appeared and steamboats plied the river and canal. A news- aper, the *Bytown Gazette*, was started in 1836.

* Revised by the Public Relations Division, National Capital Commission, Ottawa.

Bytown was now the inland centre of the squared timber trade and by 1850 cou boast of some fine stone buildings, among them the home of Thomas MacKay whi today forms the central part of the residence of the Governor General of Canada. A chan then occurred in the timber industry, the British system of preferential import duties squared white and red pine logs was abandoned and trade began to decline. However, this time the accessible forest stands of the eastern United States were depleted and sa lumber was needed to house a growing population. Also, the American railway and can network had extended to the Canadian border, making transportation easy. Encourag by these favourable conditions and the newly recognized availability of hydro-elect power, a group of American and other lumbermen came to Bytown, beginning in 18 and established sawmills by the Chaudière Falls. Soon the islands about the falls a the flats on both shores were covered with lumber piles and loaded barges were on th way to the American market. The sawmill industry began its rise to dominating impo tance.

At the beginning of 1855, Bytown became a city and took the name Ottawa, just time to receive a great honour and to assume a great responsibility. The United Provin of Canada, since its formation in 1841, had shuttled its capital between Kingston, Toron Montreal and Quebec and was now trying to agree on a permanent site. At the end 1857, Queen Victoria settled the dispute by choosing Ottawa. Government buildings the new capital were designed and contracts were let in 1859 for their constructi However, the task was hard and the cost much greater than expected and it was not un 1866 that the government of the Province of Canada actually moved to Ottawa. T next year the first Parliament of the new Dominion of Canada met in an incomple Parliament Building, situated on the former Barrack Hill.

The nation enjoyed a brief prosperity during most of the next decade. Ottawa gr and the government expanded as the Dominion extended its authority over more a more of British North America. In 1871, shortly after Confederation, the city had population of about 22,000. Many fine homes and stores in stone and brick were bui The Departmental Buildings, flanking the Parliament Building on the Hill, were enlarg An old wooden City Hall near the Canal was replaced in 1876 by a fine stone building a a large post office was erected at the city's centre. By the end of the nineteenth centu Ottawa was a flourishing industrial centre with a population of 59,000. It remained t hub of the lumbering industry of Eastern Canada, had the largest paper mills in t country and the leading match factory in the world. However, little effort had been ma to preserve or enhance its natural beauty until the Ottawa Improvement Commission w set up in 1899 and the Driveway along the Rideau Canal was begun. Even so, progr was slow in this direction, but in the years up to the beginning of the First World War t city centre began to take on a new face. Many new government buildings were erected laboratories, the Dominion Observatory and the Geodetic Building at the Experimen Farm, the Archives Building, the Victoria Memorial Museum, the Royal Canadian M and the Connaught Building. In 1912, the Grand Trunk Railway completed constructi of the Union Station and of the French renaissance-style Chateau Laurier whose turr continue to grace the Ottawa skyline. During this period several studies were made a plans recommended for the improvement of the national capital but these were defer because of the War and for other reasons. Fire destroyed the Parliament Building 1916, leaving standing only the octagonal library now forming part of the magnific building of neo-Gothic architecture which replaced it. The city beautification progr was continued by the Ottawa Improvement Commission until 1927 when it was repla by the Federal District Commission.

The City of Ottawa today has a population of over 300,000. It is a self-governi municipality, administered by an elected City Council, but there are underlying differen which set it apart from all other major Canadian centres. Historically, it has alw been the meeting place for the two founding peoples. It is the national seat of Gove

t and throughout the years the federal authorities have recognized the need of creating nd around the national capital an area of pride, not only for the residents of the city its environs but for all Canadians.

The first concrete step in the redevelopment of the Capital area took place in 1951 the acceptance by Parliament of a comprehensive master plan (the Gréber Plan) mmending solutions to many of the problems impeding the growth of the region, and the onal Capital Commission, successor to the Federal District Commission, was formed in to carry out the recommendations. Its role in planning for and assisting in the develop- t of the National Capital Region was to acquire and develop property, construct and tain roads, bridges, parks and other public works, and to undertake joint projects municipalities, construct and operate concessions, make grants for various purposes maintain historic buildings.

The National Capital Region today encompasses an area of 1,800 sq. miles—half in Province of Ontario and half in the Province of Quebec. There are 72 municipalities in the region and although the Commission has no autonomy over these communities, -operates closely with them, sharing financially in many municipal undertakings that of benefit to the region and providing planning advice upon request.

The major recommendations of the Gréber Plan, which were projected over a long od and included the creation of large open spaces within the area, the restoration of the es of the waterways, the construction of landscaped driveways and parks and the removal ilway trackage from the central sections, have been completed and the emphasis is on over-all development with the objective of bringing about conditions of balanced l and economic growth among all parts of the Region. This trend is being followed he municipal level with the formation of regional governments in both the Ontario and bec sections. In particular, the Commission has acquired property in the business ict of Hull to be reserved for the siting of future Federal Government buildings and other major works. At the same time, although vitally involved in the future, the mission has not lost sight of the past. Historic sites are being marked and an inventory piled of all buildings and sites of historical or architectural significance.

The Commission is a Crown corporation headed by a Chairman and reporting to iament through the Minister of Regional Economic Expansion. It is made up of nembers representing the 10 Canadian provinces and the Northwest Territories. ending on the season, it employs between 600 and 800 people.

Section 7.—Wildlife Resources and Conservation*

Wildlife is an important renewable natural resource. The original inhabitants of t is now Canada depended on it for food and clothing and still do in some remote areas. coming of the Europeans brought development of the fur trade which guided the course n in exploring and settling the land as we know it today. When the country was being ed up, a number of mammals and birds became seriously depleted or extinct. The enger pigeon, the great auk and the Labrador duck became extinct; bison vanished the prairies; wapiti, prong-horn antelope and muskoxen were reduced to fractions of former numbers. As settlement progressed, wildlife habitat was reduced by cutting burning of forests, pollution of streams, industrial and urban development, drainage etlands, building of dams, and other changes in the land.

Today, the arctic and alpine tundra, a major vegetational region, has begun to show us man-made changes. The adjacent subarctic and subalpine non-commercial forests been affected principally by increased human travel which causes more forest fires, ough the great forests farther south retain much of their original character, despite itation. Cultivable lands, originally forest or grassland, have completely changed, they have, in many cases, become more suitable than the original wilderness for some

*The 1968 Year Book contains a special article on "Animal Life in Canada Today", prepared by scientists Zoology Division, National Museums of Canada, under the direction of E. L. Bousfield, Chief Zoologist.

forms of wildlife. Moose, deer, ruffed grouse and coyotes still thrive, probably in gr numbers than in Indian days. Fur species, such as beaver and muskrat, are easily man and many small mammals and birds do better in fields and woodlots than in virgin fo provided that they are not poisoned by pesticides. The harvestable surplus of game fur species across Canada is seldom fully utilized and wildlife will remain generally abun where habitat is preserved and management enlightened.

Today, Canada is known for its varied and abundant wildlife. It maintains mos all, of the world's stocks of woodland caribou, mountain sheep, wolves, grizzly bear wolverines. These animals exist because of the vast habitat and because of the e that have been made to preserve them.

In 1885, the Rocky Mountain Park (now Banff National Park) was establish Alberta, preserving an area of over 2,500 sq. miles in its natural state; in 1887, the Contin first bird sanctuary was established at Last Mountain Lake in Saskatchewan; in when wood bison faced extinction, laws were passed to protect them; and in 1907, a nu herd of plains bison was established at Wainwright in Alberta. These were among attempts at wildlife conservation in Canada.

For a long time, certain species were protected from man and predator. Now, h a better understanding of how nature works, it is recognized that many factors com cause fluctuations in wildlife numbers and hunting seasons and bag limits are based greater extent on knowledge of these factors. The science of population dynamic shown that, contrary to popular ideas about stocking, an area will support only so animals and highly productive species must have a quick turnover. Wildlife can nev considered apart from environment. Given a fully stocked environment, the a increase need only replace the losses. Surplus production can therefore be safely tak predatory animals or, in the case of game species, by man.

As a natural resource, wildlife within each province comes under the jurisdiction provincial government.* However, the Federal Government does have responsibilit wildlife on federal land, for research and management of species that have a wide r and for species that are covered by international treaty, such as the Migratory Treaty between Canada and the United States.

The Canadian Wildlife Service.—The Canadian Wildlife Service was organiz 1947 to meet the need for scientific research in wildlife management, and is now a B of the Department of Indian Affairs and Northern Development. The Service con scientific research into wildlife problems in the Northwest Territories, Yukon Territor national parks, advises the agencies concerned with wildlife management and co-op in carrying out their recommendations. It administers the Migratory Birds Conve Act and co-ordinates and advises on the administration of the Game Export Act i provinces. The Service also deals with national and international problems relati wildlife resources and co-operates with agencies in Canada and abroad having s interests and problems.

The Migratory Birds Convention Act was passed in 1917 to ratify the Migratory Treaty made with the United States of America in 1916. The Canadian Wildlife S is responsible for recommending the annual revision of the Migratory Birds Regul which govern open season, bag limits and hunting practices for migratory game Provincial authorities co-operate in administering and enforcing the Act and Regul and the Royal Canadian Mounted Police enforces them. There are now 96 migrator sanctuaries in Canada, with a total area of 45,196 sq. miles.

Bird-banding provides valuable information on the migration of birds and their n history, and is especially useful in waterfowl management. Leg bands with serial nu

* The conservation of wild fur-bearing animals in the different provinces is discussed in the Fisheries a Chapter, Part II, and information on provincial conservation of fisheries resources is given in Part I of th Chapter, together with data relating to the work of the Fisheries Research Board of Canada and to interr fisheries conservation (see Index).

upplied by the United States Bureau of Sport Fisheries and Wildlife for use in Canada, United States and Central and South America. Duplicate sets of continental banding ds are kept in Ottawa.

The latest count of the once seriously declining barren-ground caribou showed an enging increase in 1967 to 357,000 animals. A study of herds in the Keewatin District e Northwest Territories and in northern Manitoba, begun in 1966, has been completed a report is being prepared. Field observations, post-mortem examinations of nearly 0 animals, and laboratory examinations indicated that the general health of the Kamink barren-ground caribou was surprisingly good. However, further investigations are anted to assess the significance of a number of conditions that were detected.

Reports on wolf-caribou relationships, on Arctic fox and on grizzly bear are being ared and research is under way on mink, muskrat and beaver. Study of big game mals in the national parks is continuing, with special attention to mountain sheep lk in the mountain parks. Ecological studies, particularly of areas where development t disturb wildlife habitat, are being emphasized. In Wood Buffalo National Park, lems of diseases and low reproduction among bison have been investigated and, in Brunswick, studies of the relationships between forests and wildlife are continuing.

The loss of wetlands to drainage and filling for agricultural and other purposes poses ious threat to waterfowl. The Service and provincial authorities are co-operating in jor program of preserving wetlands by purchase and long-term lease. A program to erve important wetlands habitat was started in 1967 and by the end of March 1969 oximately 37,000 acres had been bought for $2,600,000 and 51,000 acres had been d at a cost of $296,000.

Much time has been devoted to species greatly reduced in number or in danger of ction, such as the Ipswich sparrow, the trumpeter swan and the whooping crane. ggs of the whooping crane were taken from Wood Buffalo National Park in 1967 and 1968 and in 1969 to provide the nucleus of a captive breeding population. Fourteen eny from these eggs are being reared and the young will be released into the wild when fficiently large supply of breeding birds has been developed.

An annual mail questionnaire survey of a sample of waterfowl hunters, based on es of purchasers of the Canada migratory game bird hunting permit, provides estimates e species and age composition of the major game species. Each year, nearly 400,000 it holders harvest about 3,000,000 game ducks, other than sea ducks, as well as lesser bers of many other migratory game birds. Other continuing programs include an ial survey of crop damage in the Prairie Provinces, annual surveys of waterfowl lations and habitat conditions in Western Canada, bird-banding, and participation in gram to reduce bird hazards at airports. Substitutes for lead shot are being studied rder to eliminate the large annual loss of waterfowl from lead poisoning.

Toxic chemicals, such as pesticides and industrial compounds, being released into the ronment in ever-increasing quantities may produce immediate or long-term effects on life populations. Pesticide research aims at defining and measuring these effects so hazards of such compounds may be more clearly understood. Populations of fish, hibians, small mammals and their mammalian predators, songbirds, raptors, and atic birds are under study.

The Canadian Wildlife Service is participating in the Canada Land Inventory of the artment of Regional Economic Expansion. The Canada Land Inventory is a conated federal-provincial program to gather information on how land in the settled parts anada (1,250,000 sq. miles) is being used, and how it could best be used for agriculture, stry, recreation and wildlife. With the co-operation of provincial biologists and techans, 16 Canadian Wildlife Service officers are preparing maps showing capability of to produce and/or support waterfowl and ungulates. (See Chapter X.)

Research in limnology includes productivity of national park waters and the bio of fish and associated fauna. Adequate stocks of fish are maintained through mo methods of management, where they can be applied without detriment to the aest values of the areas concerned.

The Service research staff totals about 70. Specialists covering mammalogy, limnol migratory bird populations, migratory bird habitat, ARDA programs, pesticides, pathol interpretation and biometrics are stationed at the head office in Ottawa. Offices are loc in Fort Smith and Inuvik, N.W.T.; Whitehorse, Y.T.; Vancouver, B.C.; Edmonton Calgary, Alta.; Saskatoon, Sask.; Winnipeg, Man.; Ottawa and Aurora, Ont.; Quebec Que.; Fredericton and Sackville, N.B.; Halifax, N.S.; and St. John's, Nfld. The Wes Region is based in Edmonton and the Eastern Region in Ottawa. A number of unive graduates and undergraduates are engaged annually to assist in summer field w 16 scholarships worth $1,200 each were awarded in 1969 to graduate students in wil and allied fields.

RESOURCE AND ECONOMIC DEVELOPMENT NORTH OF THE 60TH PARALLEL*

As the nation entered the 1970s, Canada's vast territories north of the 60th par emerged as the world's newest frontier. The exploration and development of the reso of the Yukon and the Northwest Territories in the latter half of the 1960s focused i national attention on the area. These activities demonstrated the tremendous econ potential and the importance to Canadians of identifying themselves more directly the North.

Man and his new technology has quickly dispelled the myths of the North as an barren and worthless land. Today's North is regarded as Canada's vault, contai uncounted riches in natural resources. This new frontier begins at the 60th parallel, w marks the boundary of the Yukon and Northwest Territories and the provinces of Br Columbia, Alberta, Saskatchewan and Manitoba. It is a land of extremes, of great tances, inhabited by only 45,000 people.

The Yukon Territory covers an area of 207,076 sq. miles. Its face is studded mountain ranges, forested valleys and rushing streams. The Northwest Territo covering 1,304,903 sq. miles, is a land of great contrasts. To the west lies the Mack region, through which flows one of the world's mightiest rivers, from mountain can down broad valley to the Beaufort Sea. The barren lands of the central region, wh came the legends and myths of the cruel, heartless North, are now being traverse modern-day explorers searching for information that will expand the inventory of nort resources.

To the east and north is the High Arctic, an incredible expanse of mountain an choked fiord, windswept island and frozen sea that for 400 years has foiled those who sought a northwest passage to the Far East. Today, as riches are uncovered, as markets for their products are sought, man is applying his new technology to mak northwest passage a reality.

When the Vikings sailed from Greenland across Davis Strait to Baffin Island, a 1000 A.D., they described it as Helluland—"A Naked Land of Rocks"—and retre leaving the wasteland to the native Eskimo. It was not until the fifteenth century tha white man returned to the region, in search of a polar route to Cathay. The first rec attempt to develop the resource potential of the North was in 1576 when Sir M Frobisher discovered what he thought to be gold on Baffin Island. The samples he back to England turned out to be worthless iron pyrites—fool's gold.

Behind the early explorers came the whalers looking for oil to light the lamps o world. And behind them were the fur traders, ranging west and north through the T

* Prepared in the Department of Indian Affairs and Northern Development, Ottawa.

ries. In 1670 the Hudson's Bay Company was founded to exploit the region. Later, a val, the Northwest Company, was formed but in 1821 the great fur trading companies ere merged.

The potential mineral wealth that first eluded Frobisher intrigued Samuel Hearne, Hudson's Bay Company employee, 200 years later. In 1770, he set out from Churchill cross the barren lands in search of the northwest passage and the legendary Indian copper ines along the Arctic Coast but found neither. The oil potential of the North was first iscovered in 1789 when the explorer Alexander Mackenzie noted oil seepages along the anks of the river that bears his name.

The 1800s were the glorious years for exploration in the North. Sir John Franklin rganized two major overland expeditions during the years 1819-22 and 1824-27 before he nd his party disappeared while on a naval expedition in the region. From this tragedy merged the first detailed picture of the northern geography and of the Eskimo people, r in the next decade some 40 well-organized expeditions set out by sea and over land seeking he missing men. As the explorers and fur traders moved across the North there followed n their wake the clergy bringing Christian religion and education to the native people.

Three years after Confederation, Great Britain transferred to Canada her northern erritories known as Rupert's Land and North-Western Territory, which, on July 15, 870, officially became known as the Northwest Territories. The Yukon became a separate Territory in 1898.

As government geological parties moved across the North mapping the area, they were ollowed by prospectors searching for mineral riches. In 1896 the trail ended at the banks f a stream in an isolated Yukon valley. Gold was discovered in Bonanza Creek and when he word reached the outside world it prompted the most spectacular gold rush ever seen. Tens of thousands of fortune seekers from around the world headed for the Yukon. Some ound what they were looking for; most did not. By 1966, when placer mining operations n the area finally ceased, the area had produced more than $200,000,000 in gold.

Further exploration of the North continued through the 1900s while prospectors, still afflicted by the Yukon gold fever, looked to new areas for exploitation. The arrival of the airplane in the North in the 1920s heralded another golden era as prospectors left their canoes and took to the skies, flown over the great northern expanses by the heroic bush pilots.

In 1932 the first mineral production in the Northwest Territories began on the shores of Great Bear Lake with the establishment of the famous Eldorado radium mine. This mine became a highly strategic operation during the Second World War when its uranium ore was required for the manufacture of the atomic bomb.

In 1934 gold fever struck again in the North, this time in the Yellowknife area. Five gold mines came into production over the next few years, although they were closed when war broke out. However, the war years brought other types of expansion to the Canadian North, expansion generated by such major defence projects as the Alaska Highway cutting across southern Yukon, and the 1,600-mile Canol pipeline built to transport oil from the Norman Wells field on the Mackenzie River to Whitehorse in the Yukon and oil products on to Fairbanks and Skagway in Alaska. At the same time, a chain of airstrips was constructed along the Mackenzie. Another chain of airfields, running northeast to Southampton Island and Frobisher Bay on Baffin Island, known as the Crimson staging route, was used to ferry aircraft and materiel to Greenland and Europe.

Military preparedness in the 1950s generated one of the largest construction projects undertaken in the North—the establishment by Canada and the United States of the Distant Early Warning (DEW) Line of radar stations strung across the Arctic. Early in the same decade the Eskimo was discovered by the art world. The innate talent of many of the Eskimo people to carve in stone was developed and the reputation of Eskimo carvings, prints and other crafts produced by Eskimo men and women quickly became world renowned. Today the production of arts and crafts contributes more than $1,000,000 a year to Eskimo people and the northern economy.

In 1957, North Rankin Nickel Mines on the Hudson Bay coast came into productio and was the first northern mine to make extensive use of native labour. The first Eskim co-operative in the Northwest Territories was incorporated in late 1959 and its success a a marketing and purchasing medium for the native population was such that there are no more than 20 co-operatives in the North, engaged in many activities such as commercia fishing, logging, housing, retail store operations, municipal service contracts, trapping an fur products, boat-building and handicrafts. These co-operatives contribute a great dea to the progress of the Eskimo toward assuming a greater role of responsibility in the develop ment of the North.

During the 1960s there has been an accelerated expansion of resource and economi development in the Yukon and Northwest Territories. The exploration and developmen programs, the bringing into production of industrial complexes in both regions, and th attendant development of services have all contributed to the strengthening of the econom of the Canadian North. In 1969, the United States experimental tanker S.S. *Manhatta* undertook a historic journey through the Arctic Archipelago to herald yet another effo by man to establish a northwest passage.

Oil and Gas.—The presence of oil north of the 60th parallel has been known f nearly 200 years, the first seepages having been discovered along the banks of the Mackenz River near Norman Wells in 1789. In the 1890s similar seepages were discovered alo the north shore of Great Slave Lake and near Fort Good Hope on the Mackenzie.

The first producing oil well in the North was brought in by the Northwest Compan a subsidiary of Imperial Oil Limited, at Norman Wells in 1920. Development of the isolate field proceeded slowly until the Second World War when petroleum products were require in Northern Canada and Alaska. Many new wells were drilled in the 1940s and by 194 gross production totalled 1,220,000 bbl. In order to move the crude, 25,000 men we employed between 1942 and 1944 laying 1,600 miles of products and crude oil pipes an building a maintenance road from Norman Wells to Whitehorse.

The pipeline operation was terminated at the end of the War and since then productio at Norman Wells has varied from 1,500 to 2,400 bbl. a day. The Norman Wells field estimated to contain 419,000,000 bbl. of oil-in-place. The field has produced abo 14,000,000 bbl. and the Canadian Petroleum Association estimates 48,000,000 bbl. additional recoverable oil. The refinery produces gasoline, stove oil, diesel and industri fuels for the Mackenzie region of the Northwest Territories. Norman Wells produc 860,000 bbl. of oil in 1969.

In the latter half of the 1960s the international search for oil and gas reserves mov into the Canadian North and neighbouring Alaska. The discovery of massive reserv at Prudhoe Bay on the north slope of the Alaska coast in 1967 generated new waves exploration activity in the Yukon and the Northwest Territories. In the same year t Federal Government entered into a unique partnership with several of Canada's leadi oil and mining firms for the development of an oil and gas exploration program in t Arctic Islands, a partnership known as Panarctic Oils Limited. Initially, to launch t program, the Government contributed $9,000,000 and the companies $11,000,000. return for this participation of 45 p.c. in the first stage of the exploration, the Feder Government held 45 p.c. of the common shares and 45 p.c. of the preference shares th issued by the company. In 1970 the Federal Government contributed an addition $13,500,000 to the Panarctic program, maintaining its 45-p.c. equity position in an e panded program.

Panarctic made its first major gas discovery at Drake Point on Melville Island in 19 Drilling at this first of two wells at Drake Point went to 8,600 feet before mechanical diffic ties forced a halt to operations. In drill stem tests, gas flowed at the rate of 10,000 Mcf day from one zone and 13,000 Mcf. from another. In 1969–70 the Panarctic drilli

Canada's northland is a national asset with an almost unbelievable potential, just beginning to be realized. Recent activity in this vast frontier region has brought to light extensive natural resources and, in its wake, modern housing, shopping facilities, plants, schools and libraries are making life in the small and widely separated communities more amenable, and great communication networks and transportation innovations are helping to alleviate their isolation. At the same time, attention is being focused on the imperative need to protect the environment and to assist the native people to take their rightful place in the development of their localities.

The native human resources are of immense importance to the eventual development of the North. Children are given the same opportunities for learning as elsewhere in Canada although their studies are adapted to the environment in which they live and will work.

dian No ! Telecommunications tower at Parson's Site, 40 miles west of Inuvik.

Unloading supplies by helicopter from a chartered vessel at Resolute, Carnwallis Island.

Tuktoyaktuk on the Arctic Coast is the northern terminus of the Mackenzie River transportation system where freight bound for Arctic Island points is transferred from river barges to ocean-going ships during the two-month summer season. About 400 Eskimos and 50 white people live in the community.

30-ton tracked vehicle meets one of the great ges of the northern terrain—it can travel through muskeg five to six feet deep.

A hovercraft in use during exploration activities on Herschel Island.

A seismic explosion during the search for oil in the Arctic Islands.

A young prospector examines drill cores near Great Slave Lake, N.W.T.

gram moved farther north to Ellef Ringnes Island in the western Arctic Archipelago, roximately 800 miles north of the Arctic Circle, and additional exploration on Melville nd was included in the 1970 schedule.

In that year, 41 companies had signed up for 24 exploration Polarquest projects to be dertaken by Pallister and Associates Ltd., a $43,000,000 program of geological and geo-sical exploration work in the Arctic Islands offered by a group of private consulting firms. Jan. 14, 1970, Imperial Oil Limited brought in the first Arctic oil well, at Atkinson nt 35 miles northeast of Tuktoyaktuk on the Beaufort Sea. The oil was found when taceous sands at about the 5,700-foot level were drill stem tested. Atkinson Point, on Mackenzie River delta, is about 400 miles east of Prudhoe Bay.

This discovery, combined with developments at Prudhoe Bay, brought into focus the blem of transportation of oil from the Canadian North and with it the question of the tection of the northern ecology. Eleven companies joined to form Mackenzie Valley e Line Research Limited for the purpose of undertaking a feasibility study on the con-uction of crude oil and gas pipelines running down the Mackenzie River Valley to con-t with existing pipeline systems serving Canadian and United States markets.

Transport of arctic oil by ocean tanker is also under active study. The Humble Oil mpany of the United States began field trials in 1969 with the tanker, S.S. *Manhattan*, ose hull was re-designed and strengthened to fight the arctic ice. The *Manhattan* de its way through the Arctic Archipelago but only with the assistance of Canadian -breakers. Similar trials were conducted in 1970.

The federal Department of Public Works in 1970 organized studies to examine the sibility of constructing a major oil port on Herschel Island about 100 miles west of kinson Point, which could serve both Alaskan and Canadian oil fields. Other potential rt locations in the same general area are being examined.

Oil and gas exploration and development in the Yukon is a fairly recent activity. he first land holdings were acquired in 1952 but active exploration did not begin until 1958. any Canadian and international oil companies have acquired land in the Yukon and, up the end of 1969, 33 wells had been drilled in that territory. Activity is centred on four ologically distinct areas—the Liard Plateau, the Peel Plateau, the Eagle Plain and the ctic Coastal Plain. From geological data gathered to date, it is estimated that about ,000 sq. miles, or 10 p.c. of the Yukon Territory is considered to be prime oil and gas ploration land. Considerably more drilling will be required before it is known whether is oil and gas potential can be realized. However, two major gas fields, in the area where e borders of the Yukon, the Northwest Territories and British Columbia meet, are being veloped. One, the Beaver River pool which straddles the British Columbia–Yukon rder, has proven reserves of 1,440,000,000 Mcf. Proven reserves in the Pointed Mountain ol, 25 miles northeast of Beaver River in the Northwest Territories, are 1,510,000,000 cf. with proven and probable reserves totalling 2,270,000,000 Mcf. Negotiations for ovement of gas from this area to United States markets began in late 1969.

Mines and Minerals.—By 1970, the inventory of the mineral resources north of e 60th parallel had reached impressive proportions. Immense deposits of iron ore, pper, asbestos, lead and zinc have been uncovered throughout the area. Although only a action of these resources has been or is in process of being developed, the effect of even is amount of activity on the northern economy has been very dramatic. The total value mineral production in both Territories in 1970 was estimated at $175,000,000, an increase approximately 500 p.c. over the value of 1961 production which stood at $30,100,000. he intense interest in northern mineral development can be measured by the six-fold crease in the number of claims staked in the Territories—from 5,800 in 1963 to 35,500 in 969, with a peak in 1968 of 52,000 claims.

The mineral potential of the North was dramatized by the famous Klondike Gold ush of 1896 but, until recently, the industry has developed only sporadically. The first ineral production in the Northwest Territories did not take place until 1932 when the

Eldorado uranium mine began operating on the shore of Great Bear Lake. The discover of gold in the Yellowknife area in 1934 generated considerable activity but this ended wit the outbreak of the Second World War. Gold mining did resume following the War bu it was not until 1964, with the development of the Pine Point lead and zinc mine, that th mining industry in the Northwest Territories began making spectacular gains. In tha year, just prior to the Pine Point development, mineral production was valued at $17,600,000 in the following year it jumped to $73,700,000.

More recently, the search for minerals in the Northwest Territories has moved farthe north. During the period 1966-69, some 60 exploration companies converged on the Copper mine River area, searching for the copper deposits sought by Samuel Hearne two centurie ago. Two firms succeeded in outlining in excess of 4,000,000 tons of ore averaging 3.0 p.c copper. In 1969, permits covering 15,000,000 acres were issued, largely for uranium ex ploration in southern and central Keewatin and in southern Baffin Island. Developmen studies are continuing on the Mary River iron ore deposits found in the northwestern are of Baffin Island in 1963-64. The body is judged to contain approximately 130,000,000 ton of iron ore grading 68.2 p.c. iron, making this one of the world's largest high-grade iron or discoveries. A nearby lead-zinc prospect, found in 1968 at Strathcona Sound, is also unde intensive study, possibly leading to a large mining development.

Major mining developments in the Yukon in the 1960s have enhanced the econom of that Territory. Whereas the value of mineral production in 1961 stood at onl $12,700,000, the 1970 value was expected to reach $60,000,000. The major reason for thi dramatic increase was the bringing into production of an asbestos mine at Clinton Cree in 1968, and of a lead-zinc mine in the Mount Nye area of east-central Yukon in 1969.

In both instances, the development of mining properties has created new communities new transportation facilities, new job opportunities and new associated industries an businesses in the North.

Water, Forestry, Land.—Water today ranks as the most important renewabl natural resource in the Canadian North. Initially it was regarded mainly as a means o transportation and for local supply purposes but later, as industry moved northward an new communities were created, it became valuable as a source of power. Today, as con tinental supplies of fresh, unpolluted water diminish rapidly under industrializatio Northern Canada water assumes even greater importance.

The Federal Government is currently compiling a detailed inventory of the wate resources of both Territories, which are found in three of the main drainage basins o Canada. The map on p. 10 shows the Yukon River and its tributaries, flowing north westward into the Bering Sea, as included in the Pacific drainage basin; the Mackenzi River and its tributaries as well as the streams flowing east of the Mackenzie into th Arctic Ocean as dominating the Arctic basin; and the streams flowing eastward into Hudso Bay as part of the Hudson Bay drainage basin. At the same time, studies are bein undertaken of hydro-electric power potential throughout the North.

Inventory surveys are also evaluating the forest resources north of the 60th parallel, reflection of the increased interest in this area being shown by the forest industry. The is an estimated 77,000 sq. miles of productive forest in the Yukon and the Mackenz District of the Northwest Territories containing an estimated 23,000,000,000 cu. ft. o merchantable timber. Until 1969 utilization of this northern forest resource was confine to local sawmill operations but in that year agreements were signed with four firms to develo forest operations in the Yukon, and in 1970 two forest regions in the Yukon and Northwes Territories were made available for commercial timber harvesting. It is expected tha these developments will lead to the export of Territorial wood and wood products.

Because of geographical and other factors, the Territories are not agricultural areas an farming on a successful full-time basis has limited possibilities. Land utilization oppo tunities are confined primarily to industrial and urban expansion, outdoor recreatio trapping, hunting and fishing. The development of tourism as a major industry north o the 60th parallel holds tremendous promise. As one of the world's last frontier region

North has unique attractions—a wide variety of breathtaking scenery, an abundance ildlife and colourful people. Increasing demand for tourist accommodation and more ational facilities is providing many opportunities for potential investors. The Federal ernment in 1969 established a $5,000,000 small business loan fund to assist entrepreneurs oth Territories in establishing and expanding such tourist service industries as motels, ls, restaurants and stores.

In 1970 a move was made toward the establishment of the first national park in the hwest Territories when the Federal Government set aside for future development a 0-sq. mile area on the East Arm of Great Slave Lake on the edge of the Barren Lands.

Transportation and Communications.—The rapid development of the resources ne Territories has brought about a revolution in transportation and communications h of the 60th parallel. Although physical barriers, tremendous distances and extremes eather are formidable obstacles, man and his technology is establishing efficient systems.

The bush 'planes which carried men and materials during the 1920s and 1930s have replaced by jet aircraft, making travel into the North now only a matter of hours. traditional north-south travel links are being complemented by east-west airline routes ne demand for passenger and freight service throughout the Territories grows. Four mercial airlines provide regularly scheduled passenger and freight service through the itories. Fares and freight rates are from 20 to 50 p.c. higher than in Southern Canada although the introduction of faster and more efficient equipment on many northern es is closing the gap, they will probably always remain higher because the maintenance ficient services in the North is so much more expensive.

Movement of freight by water is still a major form of transportation in the Northwest itories. Two main systems operate annually—one along the Mackenzie River sys- and the other a sea lift to the eastern Arctic and the Arctic Islands.

The construction of the Alaska highway through the southern Yukon during the Second ld War gave that Territory road access to Southern Canada and to Alaska. It remains principal highway but from it extends an ever-growing network of roads serving the urce industries. In 1965 the Federal Government initiated a Northern Roads Program ch authorizes an annual expenditure of $10,000,000 for ten years. One major road ned in 1969 was the 129-mile, $9,300,000 Ross River–Carmacks road servicing the new il Mining Corporation lead-zinc mine, concentrates from which are trucked to White- e. At Carmacks they meet trucks carrying asbestos from Clinton Creek. The tainerized loads are moved by rail to tidewater at Skagway in Alaska, 110 miles distant, re they are transferred aboard ship.

In the Northwest Territories the Pine Point mining operation has produced major nomic side benefits, one of which is the 435-mile Great Slave Lake railway linking Pine nt to Grimshaw in Alberta. This continental rail system has generated considerable thbound traffic in freight and general merchandise. On the return trip, the trains ying ore and concentrates from Pine Point also haul agricultural and forest products. w farming areas and new communities have sprung up in far northern Alberta along the line. Running parallel to the Great Slave Lake Railway is the 600-mile Mackenzie hway, connecting Yellowknife with the southern road system. A $10,700,000 extension he Mackenzie Highway running 95 miles northwest to Fort Simpson, which was opened 970, is the beginning of what may eventually be a permanent highway down the Mac- zie River Valley to the Arctic Coast.

As the transportation network grows, so does the system of the communications ing both Territories. A combination of land lines, microwave and tropospheric ter systems, and private radio networks bring the most isolated settlements into contact n the outside world. Television is still relatively new, with service at present confined rontier packages offering four hours of taped broadcast a day at major population centres. wever, the forthcoming establishment of a domestic satellite communication system the whole of Canada is expected to provide vastly improved communication services ll areas north of the 60th parallel.

People.—The human resource is the key to the successful development of all the natu resources north of the 60th parallel. Like the other resources, it has barely been develop At the 1966 Census, the total population of both Territories was 43,120; by 1970 it risen to an estimated 48,000, of whom about 30,000 were in the Northwest Territories.

One of the major current challenges is the integration of the native Indian, Esk and metis people into the economic life of the Territories. A recent study of the lab force in the Territorial mining industry indicated that the indigenous people compri only 4.5 p.c. of the total work force, while, according to the 1961 Census, they compri 45.3 p.c. of the Territorial population. This low rate of participation may be traced such factors as educational background, labour force requirements and attitudes of industry involved, social problems and housing, added to which was the movement of indigenous people within the Territories.

In an effort to correct this problem, the Federal Government in 1969 introduced Employment Liaison Program designed to find more effective ways of increasing empl ment opportunities and of bringing together government and industry in the developmen practical training programs for native residents. Among the first projects under this gram was the establishment of a committee composed of representatives of government industry to help northern residents find employment in the oil industry.

In addition, the Federal Government is giving financial and other assistance industries to provide on-the-job training for northern residents; industries, as part their agreement with the Government in establishing in the Territories, are taking cer numbers of northern residents into their labour forces.

Conservation.—The development of an Arctic oil industry and the attendant r of pollution from oil spills prompted the Federal Government, in April 1970, to introd legislation to protect the ecology of the Arctic. The Arctic Waters Pollution Bill designed to prevent pollution of the areas of the Arctic waters adjacent to the mainland islands of the Canadian Archipelago. This Bill was accompanied by amendments to Territorial Sea and Fishing Zones Act, which would extend the limits of Canada's territ sea to 12 miles from three, and would authorize the Government by Order in Counci create exclusive Canadian fishing zones comprising areas of the sea adjacent to the co of Canada. The effect of the Arctic Waters Pollution Bill would be to make clear that Northwest Passage is to be opened for the passage of shipping to all nations subject to necessary conditions required to protect the delicate ecological balance of the Cana Arctic. The Bill itself deals with pollution arising from shipping, from land-based inst tions, and from commercial activities such as oil drilling carried out on the continental sh

A new Northern Inland Waters Bill* provides for comprehensive management of freshwater resources north of the 60th parallel. The legislation ensures that the inl waters will forever remain public property, to be used, managed and developed in interest of the region and the nation as a whole. It provides for the establishmen Territorial Water Boards to grant water licences only on condition that the users ac full responsibility for maintaining or restoring the quality of water to acceptable stand before returning it to the natural environment.

In additional moves to protect the northern ecology, the Federal Government, in 1970, announced a program designed to reduce or eliminate permanent damage to land n of the 60th parallel. The program included amendments to the Territorial Lands Act and implementation of Land-Use Regulations which would control and regulate land use by z

Under an Arctic Land-Use Research Program (ALUR), funds will be made availabl several Canadian universities for studies leading to the detection and definition of envi mental problems associated with land-use resulting from northern development. D gathered in these studies will be used to determine the most effective uses of land in North. Three land-use research sites were designated for study, in the boreal forest re of the Liard River basin, on Richards Island in the sensitive tundra zone of the Macke delta, and in the precambrian zone between Great Slave Lake and Great Bear Lake.

* See Chap. XXVII, Part V on Federal Legislation, 1969-70.

CHAPTER II.—CONSTITUTION AND GOVERNMENT*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

PART I.—CONSTITUTION OF CANADA

The Canadian federal state, which today comprises ten provinces and two vast northern territories, had its beginning over one hundred years ago in the enactment (Mar. 29, 1867) by the British Parliament of the British North America Act, 1867. Fashioned largely out of Seventy-two Resolutions drafted at Quebec (1864) by the Fathers of Confederation, British North America Act, 1867 provided for the federal union of the three British North American provinces (Canada, New Brunswick and Nova Scotia) in one Dominion under the name of "Canada".

* Except where otherwise indicated, the data in this Chapter have been brought up to the date of May 1, 1970. Important changes that may occur between that date and the date of going to press of the volume will be carried in Appendix.

Although the new nation that came into being on July 1, 1867 was a federation c prised of four provinces (namely, Ontario, Quebec, New Brunswick and Nova Scotia) S 146 of the Act provided for the admission into the Union of the Crown colonies of Pr Edward Island and Newfoundland on the Atlantic and the united (1866) island and m land colony of British Columbia on the Pacific, and also of the vast expanse of Hudson's Company territory in the North West known as "Rupert's Land and the North-Wes Territory". Following the negotiation of an agreement on terms comprising the Compa surrender of its authority and territories to the Crown (which was to transfer them at to Canada) and the retention of one twentieth of the land of the fertile belt (the south territories) with designated blocks of land around its trading posts and a Canadian payment of £300,000, the new nation of Canada was ready to expand westward considerable momentum across the Continent to the Pacific.

The acquisition by Canada of Rupert's Land and the North-Western Territory ena the Red River settlement, after a few months of disturbance, to receive limited provi establishment under the name of "Manitoba" in 1870; provided the Federal Governn with the public lands needed to help subsidize a transcontinental railway linking Pacific with the Canadian East, thereby fulfilling the pledge to British Columbia to b the Canadian Pacific Railway within two years and to complete it within ten years of date of union, July 20, 1871; and laid, through the provision of millions of acres of pu lands, the land and economic bases for the Federal Government's adoption of a homestead policy for the Canadian prairies that, in conjunction with the completio the Canadian Pacific Railway and the launching of other railway lines, brought wave a wave of settlers into the Northwest Territories in such numbers as to justify the crea of the two Provinces of Saskatchewan and Alberta in 1905 out of the portion of the No west Territories south of the 60th parallel of north latitude. Although provision for t entry was included in the British North America Act, 1867, the Province of Prince Edw Island held back from the Union until 1873 and Newfoundland became Canada's t province on Mar. 31, 1949.

The Constitution of Canada, which had a corporate beginning in 1867, combine a set of rules determining the creation and operation of the machinery or institution government, the Cabinet system of responsible government (based on an inheritance f Britain) with a Canadian adaptation of federalism (as then practised in the United St for eighty years). A written document, the British North America Act of 1867, cont a substantial portion of Canada's Constitution and this Act, with its various amendmer is popularly held to be the Canadian Constitution. There is, however, another and perh more important part which appears, through the evolutionary processes of histo growth, in various guises including well-established usages and conventions found in unwritten provisions of the Constitution.

Thus, the British North America Act is not a comprehensive constitutional docun presenting an exhaustive statement of fundamental laws and rules by which Canad governed. The Constitution of Canada in its broadest sense includes other British stat (such as the Statute of Westminster, 1931) and Orders in Council (notably those admit various provinces and territories to the federation), Statutes of the Parliament of Can relating to such matters as the succession to the Throne, the Royal Style and Ti the Governor General, the Senate, the House of Commons, the creation of courts, establishment of government departments, the franchise, elections, and also statute provincial legislatures relating to provincial constitutional institutions and governn matters. Federal and provincial Orders in Council, legally authorized by their respec statutes, provide further constitutional material as do the decisions of the courts w

* See *A Consolidation of The British North America Acts 1867 to 1965*, consolidated by Elmer A. Driedger Jan. 1, 1967. Information Canada, Ottawa. 75 cents (Catalogue No. YX1—167).

nterpret the British North America Act and all ordinary statutes and indeed possess the ower to set aside any laws which they hold to be *ultra vires* or beyond the jurisdiction f the enacting legislative bodies, whether federal or provincial. Moreover, the Canadian onstitution comprises, in addition to the statutory law and its judicial interpretation, ubstantial sections of the common law, unwritten constitutional usages and conventions nd principles of democratic government which were transplanted from Britain over two undred years ago and since then have been thriving and evolving in the Canadian en- ironment. For example, the Cabinet system of responsible government (see p. 78) nd its functioning through close identification of the executive and the legislative powers that is, of the Cabinet and the House of Commons) is not mentioned in the British North merica Act but derives from an unwritten convention of the Constitution.

Although the essential principles of Cabinet government are based in custom or consti- utional usage, the federal structure of Canadian government rests on the explicit written rovisions of the British North America Act. Apart from the creation of the federal union, he dominant feature of the Act and indeed of the Canadian federation was the distribution f powers between the central or federal government on the one hand and the component rovincial governments on the other. In brief, the primary purpose was to grant to the arliament of Canada legislative jurisdiction over all subjects of general or common nterest, while giving to the provincial legislatures jurisdiction over all matters of local or articular interest (see p. 84 and p. 108).

Unlike the written constitutions of many nations, the British North America Act acks comprehensive "bill of rights" clauses, although it does accord specific constitutional rotection to the use of the English and French languages (clause 133) and special safe- uards with respect to sectarian or denominational schools. Such vital rights as freedom f speech, freedom of assembly, freedom of religion, freedom of the press, trial by jury and milar liberties enjoyed by the individual citizen are not recorded in the British North merica Act but rather depend on the statute law and the common law inheritance. ecurity of these rights was confirmed by the passage of a Canadian Bill of Rights—An ct for the Recognition and Protection of Human Rights and Fundamental Freedoms SC 1960, c. 44), assented to Aug. 10, 1960. (See also Chapter IX, Sect. 1 on Canadian riminal Law and Procedure.)

As mentioned above, the *right to use* either the English or the French language in the ouse of Commons, the Senate or the federal courts is constitutionally guaranteed by ect. 133 of the British North America Act. The *use* of the English and French languages the administration of the Government of Canada is dealt with in the Official Languages ct (SC 1969, c. 54). That Act provides that government notices to the public, certain rders and regulations, and final decisions of federal courts are to be made or issued in oth languages and that, in the National Capital Region and in federal bilingual districts, overnment services are to be available in both languages. The Commissioner of Official anguages for Canada is responsible for ensuring that the Act is complied with.

Amendment of the Constitution.—No provision was made in the British North merica Act of 1867 for amendment thereof by any legislative authority in Canada but oth the Parliament of Canada and the provincial legislatures were given legislative juris- iction with respect to some matters relating to government. Thus, for example, the arliament of Canada was given jurisdiction with respect to the establishment of electoral istricts and election laws and the privileges and immunities of Members of the House of ommons and the Senate, and each provincial legislature was empowered to amend the onstitution of the province except as regards the office of Lieutenant-Governor. By an mendment to the British North America Act passed in 1949, the authority of the Parlia- ent of Canada to legislate with respect to constitutional matters was considerably enlarged nd it may now amend the Constitution of Canada except as regards the legislative authority

of the provinces, the rights and privileges of provincial legislatures or governments, schoo the use of the English or the French language, and the duration of the House of Commo other than in time of real or apprehended war, invasion or insurrection.

The question of devising amendment procedure within Canada which satisfies t need to safeguard or entrench such basic provincial and minority rights as are not immediately above and yet possesses sufficient flexibility to ensure that the Constituti can be altered to meet changing circumstances is one that still engages the attention the federal and provincial governments and legislatures. An outline of the constitutio background to the problem, an annotated list of the fourteen occasions since 1867 wh amendments to the British North America Act were made by the United Kingdom Parl ment, a concise review of the prolonged search for a satisfactory amending proced in Canada—the subject of repeated consideration in the Parliament of Canada and i series of formal federal-provincial conferences and meetings in the years 1927, 1935- 1950, 1960-61 and 1964—and, more specifically, the text of a draft Bill "to provide for t amendment in Canada of the Constitution of Canada" (accompanied by explanatory no relating thereto) which embodies the amending procedure or formula unanimously reco mended by the Conference of Attorneys-General and unanimously accepted by the C ference of the Prime Minister and the Premiers (October 1964) are all made available an official publication entitled *The Amendment of the Constitution of Canada*, authoriz by the Minister of Justice, February 1965.*

Treaty-Making Powers.†—The Federal Government has exclusive responsibility the conduct of external affairs as a matter of national policy affecting all Canadians. T policy of the Federal Government in discharging this responsibility is to seek to promo the interest of the entire country and of all Canadians of the various provinces within t over-all framework of the national policy.

In respect of matters of specific concern to the provinces of Canada, it is the poli of the Canadian Government, in a spirit of co-operative federalism, to do its utmost assist the provinces in achieving the particular aspirations and goals that they wish attain. The attitude of the Federal Government in this respect was illustrated by t "entente" signed by representatives of Quebec and France in the field of education February 1965. The Quebec and federal authorities co-operated actively in a proced that enabled the Province of Quebec, within the framework of the Constitution and t national policy, to participate in international arrangements in a field of particular inter to that province.

Thus, under existing procedures, the position is that, once it is determined that wh a province wishes to achieve through agreements in the field of education or in other fie of provincial jurisdiction falls within the framework of Canadian foreign policy, the pr inces may discuss detailed arrangements directly with the competent authorities of t country concerned. When a formal international agreement is to be concluded, howev the federal powers relating to the signature of treaties and the conduct of over-all forei policy must necessarily come into operation.

The approach of the Canadian Government to the question of Canadian representati in international organizations of a social, cultural or humanitarian character reflects t same constructive spirit. It recognizes the desirability of ensuring that the Canadi representation in such organizations and conferences reflects in a fair and balanced w provincial and other interests in these subjects.

* Available from Information Canada, Ottawa. $2 (Cat. No. J2-1665).
† Extracted from "The Provinces and Treaty-Making Powers", Appendix to *Votes and Proceedings of the H of Commons of Canada*, No. 8. Apr. 26, 1965.

—Provinces and Territories of Canada, Dates of Admission to Confederation, Legislative Processes by which Admission was Effected, Present Area and Seat of Government

Province, Territory or District	Date of Admission or Creation	Legislative Process	Present Area (sq. miles)	Seat of Provincial or Territorial Government
tario[1]	July 1, 1867	Act of Imperial Parliament—The British North America Act, 1867 (Br. Stat. 1867, c. 3) and Imperial Order in Council, May 22, 1867.	412,582	Toronto
uebec[2]	July 1, 1867		594,860	Quebec
ova Scotia	July 1, 1867		21,425	Halifax
ew Brunswick	July 1, 1867		28,354	Fredericton
anitoba[3]	July 15, 1870	Manitoba Act, 1870 (SC 1870, c. 3) and Imperial Order in Council, June 23, 1870.	251,000	Winnipeg
itish Columbia	July 20, 1871	Imperial Order in Council, May 16, 1871..	366,255	Victoria
rince Edward Island	July 1, 1873	Imperial Order in Council, June 26, 1873..	2,184	Charlottetown
skatchewan[4]	Sept. 1, 1905	Saskatchewan Act, 1905 (SC 1905, c. 42)..	251,700	Regina
berta[4]	Sept. 1, 1905	Alberta Act, 1905 (SC 1905, c. 3).....	255,285	Edmonton
ewfoundland	Mar. 31, 1949	The British North America Act, 1949 (Br. Stat. 1949, c. 22).....	156,185	St. John's
orthwest Territories[5]	July 15, 1870	Act of Imperial Parliament—Rupert's Land Act, 1868 (Br. Stat. 1868, c. 105) and Imperial Order in Council, June 23, 1870.....	1,304,903	
Mackenzie[6]	Jan. 1, 1920	Order in Council, Mar. 16, 1918.....	*527,490*	Yellowknife
Keewatin[6]	Jan. 1, 1920		*228,160*	
Franklin[6]	Jan. 1, 1920		*549,253*	
ukon Territory[7]	June 13, 1898	Yukon Territory Act, 1898 (SC 1898, c. 6)	207,076	Whitehorse
		Canada.....	**3,851,809**	

[1] The area of Ontario was extended by the Ontario Boundaries Extension Act, 1912 (SC 1912, c. 40).

[2] Extended by Quebec Boundaries Extension Act, 1912 (SC 1912, c. 45) and diminished Mar. 1, 1927 in consequence of the Award of the Judicial Committee of the British Privy Council whereby approximately 112,000 sq. miles of territory (formerly considered as part of Quebec) was assigned to Newfoundland.

[3] Extended by the Extension of Boundaries Act of Manitoba, 1881 and the Manitoba Boundaries Extension Act, 1912 (SC 1912, c. 32).

[4] Saskatchewan and Alberta created as provinces in 1905 from the area formerly comprised in the provisional districts of Assiniboia, Athabaska, Alberta and Saskatchewan established May 17, 1882 by minute of Canadian Privy Council concurred in by Dominion Parliament and Order in Council, Oct. 2, 1895.

[5] By an Imperial Order in Council passed on June 23, 1870 pursuant to the Rupert's Land Act, 1868 (Br. Stat. 1868, c. 105), the former territories of the Hudson's Bay Company known as Rupert's Land and the North-Western Territory were transferred to Canada effective July 15, 1870. These territories were designated as the North-West Territories by the Act of SC 1869, c. 3, and as the Northwest Territories by RSC 1906, c. 62. By Imperial Order in Council of July 31, 1880 (effective Sept. 1, 1880), all British territories and possessions in North America not already included within Canada and all islands adjacent thereto (with the exception of the Colony of Newfoundland and its dependencies) were annexed to Canada and these additional territories were formally included in the North-West Territories by SC 1905, c. 27. The Province of Manitoba was formed out of a portion of the territories by the Manitoba Act, 1870 (SC 1870, c. 3) and a further portion was added to Manitoba in 1881 by SC 1881, c. 14. The Provinces of Alberta and Saskatchewan were formed out of portions of the territories in 1905 and in 1912 other portions were added to Manitoba, Ontario and Quebec.

[6] By SC 1876, c. 21, a separate district to be known as the District of Keewatin was established and provision was made for the local government thereof. The Act was expressed to come into force by proclamation. It provided that portions of the District might be re-annexed to the North-West Territories by proclamation; in 1886 a portion of the District of Keewatin was re-annexed and in 1905 the entire Keewatin District was re-annexed. The Act of 1876 was never proclaimed. By Order in Council of May 8, 1882 the provisional districts of Assiniboia, Saskatchewan, Alberta and Athabaska were created for the convenicnce of settlers and for postal purposes. By Order in Council of Oct. 2, 1895 the further provisional districts of Ungava, Franklin, Mackenzie and Yukon were created. The boundaries of these provisional districts were re-defined by Order in Council of Dec. 18, 1897. Subsequently the Yukon Territory was formed, the Provinces of Alberta and Saskatchewan were created and other portions of the territories were annexed to Quebec, Ontario and Manitoba. By Order in Council dated Mar. 16, 1918 (effective Jan. 1, 1920) the remaining portions of the Northwest Territories were divided into three provisional districts known as Mackenzie, Keewatin and Franklin.

[7] The provisional district of Yukon established in 1895 was created a judicial district of the North-West Territories by proclamation issued pursuant to Sect. 51 of the North-West Territories Act (RSC 1886, c. 50) on Aug. 16, 1897 and, by the Yukon Territory Act (SC 1898, c. 6), was declared to be a separate Territory.

PART II.—MACHINERY OF GOVERNMENT

Section 1.—Federal Government*

In any political system there are processes whereby people express their demands the government; whereby priorities are established among those demands and polic formulated for their implementation; and, finally, whereby the policies are implement The institutions, both governmental and non-governmental, through which these proces are carried on vary from country to country and tend to evolve over time, so that in a given country the roles of the institutions in such processes also change over time. T Section describes the institutions of the Government of Canada and their current roles the fundamental processes of the Canadian political system.

In most countries, the legal framework within which political processes take place provided through a constitution. The written Constitution of Canada is embodied in t British North America Acts (pp. 65–67). The first of these Acts, passed by the Briti Parliament in 1867, not only established the institutions through which legislative, executi and judicial powers are exercised in Canada but also established a federal form of gove ment. A central government—the Federal Government—has legislative jurisdicti primarily over matters of national concern and over those matters not otherwise assign to the provinces. The ten provincial governments are assigned specific areas of legislati jurisdiction, including municipal institutions.

In Canada, there is a fusion of the executive and legislative powers as in Great Brita but unlike the United States system of separation of such powers. The formal executi power in Canada is vested in The Queen, whose authority is delegated to the Govern General, her representative. The legislative power is vested in the Parliament of Cana which consists of The Queen, an appointive "Upper House" called the Senate and a "Low House" called the House of Commons, elected by universal adult suffrage. The indepen ence of the judiciary is safeguarded through the constitutional provision that superior cou judges are appointed by the Governor in Council and that they hold office during go behaviour and are removable only by the Governor General on address of the Senate a the House of Commons. In other words, judges cannot be removed unless Parliamen the Cabinet and the Governor General agree.

In the Canadian system of government, where the executive is part of Parliamen democratic principles could not be adhered to without the constitutional convention th the Government is responsible to the House of Commons. When the Government los the confidence of the House of Commons, it must resign or the Prime Minister must requ the Governor General to dissolve Parliament and call a general election. Although the are conventions that help in deciding when the Government has lost the confidence of t House, all doubt is removed when the Government is defeated on a motion on which it h explicitly staked its life or when a motion of non-confidence in the Government is passe If the Government resigns, the Governor General can call on the Leader of the Oppositi (who is usually the leader of the political party that has the second largest number of sea in the House of Commons) to form a new Government. If a Government that has lo the confidence of the House of Commons and is granted a dissolution is defeated in t ensuing general election and if no clear majority is elected, the Government has two choices it can remain in office and seek a vote of confidence of the House of Commons when it mee or it can resign at once. If it resigns, the Governor General will normally ask the lead of another party, usually the one that has won the most seats, to form a new Governmen The primary responsibility of the Governor General in either circumstance is to provi the nation with a Government capable of carrying on with the support of the House Commons.

The Prime Minister and his Cabinet, who with one or two exceptions are members the House of Commons, are, formally speaking, the Queen's advisers. In fact, there a

* Approved by the Privy Council Office.

virtually no significant actions that can be taken by the Queen, or her representative in Canada, the Governor General, without the advice of the Cabinet. The Prime Minister and his Cabinet determine executive policies and are responsible for them to the House of Commons. The Queen and her representative, the Governor General, have the traditional rights to be consulted, to encourage and to warn the Government.

The demands of Canadian citizens are directed primarily to Members of Parliament, directly to Cabinet Ministers or indirectly to Cabinet Ministers through the Public Service. These demands may originate from individuals, political parties or pressure groups. Alternatively, Members of Parliament, Cabinet Ministers and public servants may take the initiative in suggesting the adoption of policies and programs in the public interest. Although the roles performed by Parliament, the Public Service and the Cabinet cannot be defined with absolute precision, the following stylized description deals with the most obvious and primary roles of each in the Canadian political system.

The determination of public policy rests with the Cabinet but begins generally with the formulation of policy by the individual Ministers. This means, usually, that the public servants under the direction of the Ministers in fact formulate policy proposals which are then submitted, if he agrees, by the Minister concerned to his colleagues in the Cabinet. The Cabinet chooses among the policies submitted and determines which it wishes to implement. The Cabinet may itself formulate policies but, more often, it simply decides from among the alternatives submitted. The establishment of a Cabinet committee system (see p. 79) that operates on a systematic basis and, more especially, the establishment of the Cabinet Committee on Priorities and Planning represent attempts to enhance the capacity of Cabinet in its primary role of policy determination and priority setting.

In conformity with the concept of the rule of law, all executive acts must be authorized by law, and laws are enacted by Parliament. Executive acts may be sanctioned directly by a statute which specifies how a policy is to be implemented, or indirectly by a statute which authorizes the Governor in Council to undertake specific acts. Much of the activity of the Public Service is authorized through the yearly enactment of Appropriation Acts authorizing the expenditure of public funds for specific purposes. As far as the operations of the Government are concerned, Parliament is concerned primarily with the discussion and authorization of policy submitted for its approval by the Government (Ministers). The approval of these policies is accomplished mainly through the enactment of legislation. In an attempt to enhance the capacity of the House of Commons to perform this role, the Government introduced changes in the rules of procedure of the House which were adopted in February 1970 and are included in the Standing Orders of the House of Commons.

The most significant feature of the above processes is that the Government, or Cabinet Ministers, have seats in Parliament and thus share in the exercise of the legislative power. In fact, the majority of legislation enacted by Parliament is submitted by the Government. (It will be remembered that the Constitution provides that all financial measures *must* be introduced by the Government.)

It is the role of the judiciary to apply the laws enacted by Parliament. In the Canadian system of government, Parliament is supreme. This means, among other things, that the judiciary must apply the law as Parliament has enacted it and cannot declare laws to be unconstitutional if they are within the legislative jurisdiction of Parliament or of the legislature that enacted them.

The administration of legislation and of the Government's policies is carried out through a Public Service comprising employees organized (1970) in 25 departments of the Government, some 30 special boards and commissions and 47 Crown corporations or other agencies. Legislation and tradition have combined to develop a Public Service that is non-partisan, the tenure of whose employees is not altered when changes in the Government take place. The only direct relationship between public servants and Parliament is when they are called to appear as witnesses before parliamentary committees. On these occasions, public servants do not, by convention, express opinions on public policy but usually appear as experts and to explain existing policy. The public servants who head agencies such as the

Public Service Commission, the Office of the Auditor General, the Office of the Languag Commission, the Library of Parliament or the Office of the Chief Electoral Officer, whicl have a special relationship to Parliament, and who are not subject to direction by th Government on matters of policy, may appear before Parliamentary Committees to explai the policies of their agencies.

The growth in number, variety and complexity of demands placed on the Governmen requires it not only to adjust its policies in response to these demands but, with increasing frequency, to make significant changes in the organization of the Public Service so that th required policies can be properly implemented. A major reorganization of the Publi Service was authorized by the passage of the Government Organization Act (SC 1966, c 25) and other changes of importance have taken place in the years following. These ar described briefly at pp. 138–139.

Subsection 1.—The Executive

The Crown.—The British North America Act of 1867 (Sect. 9) provides that "th Executive Government and authority of and over Canada is . . . vested in the Queen" The functions of the Crown (that is, the formal executive represented by The Queen) which are substantially the same as those of the Crown in relation to the British Government are discharged by the Governor General.

The Queen.—The Queen seldom personally discharges the functions of the Crown i respect of Canada except on such occasions as the periodic appointment of the Governo General which is done on the recommendation of the Prime Minister of Canada. On th occasion of a Royal visit, The Queen may participate in those ceremonies that are normally carried out in her name by the Governor General, such as the opening and dissolution o Parliament, the assent to Bills passed by the House of Commons and the Senate, and th granting of a general amnesty.

The Queen is not only Queen of Canada but of several other countries in the Common wealth. Her Majesty's title for Canada was approved by Parliament and established by a Royal proclamation on May 28, 1953. The title of The Queen, as far as Canada is concerned, now is:—

> Elizabeth the Second, by the Grace of God of the United Kingdom, Canada and Her other Realms and Territories Queen, Head of the Commonwealth, Defender of the Faith.

1.—Sovereigns of Canada since Confederation, 1867

Name	Year of Birth	Date of Accession
Victoria	1819	June 20, 1837
Edward VII	1841	Jan. 22, 1901
George V	1865	May 6, 1910
Edward VIII	1894	Jan. 20, 1936
George VI	1895	Dec. 11, 1936
Elizabeth II	1926	Feb. 6, 1952

The Governor General.—The Governor General is the representative of the Crown in Canada. The present incumbent, His Excellency The Right Honourable Roland Michener, C.C., C.D., is the twentieth Governor General since Confederation and was appointed by Her Majesty Queen Elizabeth II on Mar. 29, 1967, on the recommendation of the Prime Minister of Canada. Constitutionally, The Queen of Canada is the Canadian Head of State but the Governor General fulfils her role in this regard on her behalf. The Letters Patent revised and re-issued under the Great Seal of Canada on Oct. 1, 1947, authorized the Governor General "to exercise on the advice of his Canadian ministers, all Her Majesty's powers and authorities in respect of Canada".

Governor the Right Roland with the Wales, on Highness's Canada in 1970.

One of the most important responsibilities of the Governor General is to ensure that the country always has a Government. If the office of the Prime Minister becomes vacant because of death, resignation or defeat of the Government in the House of Commons (see p. 70), it is the responsibility of the Governor General to see that the office of the Prime Minister is filled and that a new Government is formed.

As the representative of The Queen—one of the three elements of the Canadian Parliament, the others being the Senate and the House of Commons—the Governor General summons, prorogues and dissolves Parliament on the advice of the Prime Minister. He signs Orders in Council, commissions and many other state documents, and gives his assent

to Bills that have been passed in both Houses of Parliament and which thereby become Acts of Parliament with the force of law (unless Parliament prescribes specifically otherwise). Like The Queen, he is bound in virtually all cases to carry out these duties in accordance with the advice of his responsible Ministers. Should he not wish to accept the advice of his responsible Ministers, and should they maintain that advice, his only alternative is to replace the existing Government with a new Government. This alternative could be exercised only if, at the same time, the principle of responsible government could be maintained. This means that the Governor General's discretion in choosing another Government is strictly limited to a situation in which a person other than the existing Prime Minister could command the confidence of the House of Commons.

In Canada, as in other constitutional monarchies, there is a clear division between the executive and representational functions of state. The Prime Minister, as the elected political leader of the country, is the Chief Executive and Head of the Government. The Governor General, on the other hand, is not involved in any way in party politics or political affiliation and he is, therefore, in a position to represent Canada as a whole and to speak for Canadians on ceremonial and state occasions. In effect, the Governor General has become an important symbol of the unity of Canada and the continuity of its institutions and national life.

The Governor General is Canada's host to visiting Heads of State and other distinguished visitors from abroad. He extends hospitality of many forms to many Canadians and lends his patronage in support of a great variety of activities throughout the country.

The Governor General receives the Letters of Credence of Ambassadors appointed to Canada, receives Commonwealth High Commissioners on appointment and holds investitures for the conferring of honours and awards. He is the Chancellor and Principal Companion of the Order of Canada, created in the Centennial Year as a means of recognizing distinguished public service and outstanding achievement or gallantry.

2.—Governors General of Canada since Confederation, 1867

Name	Date of Appointment	Date of Assumption of Office
The Viscount Monck of Ballytrammon	June 1, 1867	July 1, 1867
The Baron Lisgar of Lisgar and Baliieborough	Dec. 29, 1868	Feb. 2, 1869
The Earl of Dufferin	May 22, 1872	June 25, 1872
The Marquis of Lorne	Oct. 5, 1878	Nov. 25, 1878
The Marquis of Lansdowne	Aug. 18, 1883	Oct. 23, 1883
The Baron Stanley of Preston	May 1, 1888	June 11, 1888
The Earl of Aberdeen	May 22, 1893	Sept. 18, 1893
The Earl of Minto	July 30, 1898	Nov. 12, 1898
The Earl Grey	Sept. 26, 1904	Dec. 10, 1904
Field Marshal H. R. H. The Duke of Connaught	Mar. 21, 1911	Oct. 13, 1911
The Duke of Devonshire	Aug. 19, 1916	Nov. 11, 1916
General The Baron Byng of Vimy	Aug. 2, 1921	Aug. 11, 1921
The Viscount Willingdon of Ratton	Aug. 5, 1926	Oct. 2, 1926
The Earl of Bessborough	Feb. 9, 1931	Apr. 4, 1931
The Baron Tweedsmuir of Elsfield	Aug. 10, 1935	Nov. 2, 1935
Major General The Earl of Athlone	Apr. 3, 1940	June 21, 1940
Field Marshal The Viscount Alexander of Tunis	Mar. 21, 1946	Apr. 12, 1946
The Right Honourable Vincent Massey	Jan. 24, 1952	Feb. 28, 1952
General The Right Honourable Georges P. Vanier	Aug. 1, 1959	Sept. 15, 1959
The Right Honourable Roland Michener	Mar. 29, 1967	Apr. 17, 1967

The Privy Council.—The British North America Act of 1867 (Sect. 11) provides for "a council to aid and advise in the Government of Canada, to be styled the Queen's Privy Council for Canada . . .". The Council that in fact advises the Queen's representative, the Governor General, is the Committee of the Privy Council the membership of which is identical with that of the Cabinet.

Members of the Queen's Privy Council for Canada According to Seniority Therein, as at May 1, 1970

NOTE.—In this list the prefix "Rt. Hon." indicates membership in the British Privy Council, or is in accordance with the Table of Titles.

Member[1]	Date When Sworn In
h. THOMAS ALEXANDER CRERAR	Oct. 12, 1917
h. HENRY HERBERT STEVENS	Sept. 21, 1921
h. EDWARD JAMES MCMURRAY	Nov. 14, 1923
R.H. The DUKE OF WINDSOR	Aug. 2, 1927
h. DONALD MATHESON SUTHERLAND	Aug. 7, 1930
h. THOMAS GEROW MURPHY	Aug. 7, 1930
h. WILLIAM EARL ROWE	Aug. 30, 1935
h. COLIN WILLIAM GEORGE GIBSON	July 8, 1940
h. JOSEPH THORARINN THORSON	June 11, 1941
Hon. LOUIS STEPHEN ST. LAURENT	Dec. 10, 1941
n. JOSEPH ARTHUR JEAN	Apr. 18, 1945
n. LIONEL CHEVRIER	Apr. 18, 1945
n. PAUL JOSEPH JAMES MARTIN[2]	Apr. 18, 1945
n. DOUGLAS CHARLES ABBOTT	Apr. 18, 1945
n. THOMAS VIEN	July 19, 1945
n. MILTON FOWLER GREGG	Sept. 2, 1947
n. ROBERT WELLINGTON MAYHEW	June 11, 1948
Hon. LESTER BOWLES PEARSON	Sept. 10, 1948
n. STUART SINCLAIR GARSON	Nov. 15, 1948
n. HUGUES LAPOINTE	Aug. 25, 1949
n. GABRIEL-ÉDOUARD RINFRET	Aug. 25, 1949
n. WALTER EDWARD HARRIS	Jan. 18, 1950
n. GEORGE PRUDHAM	Dec. 13, 1950
n. JAMES SINCLAIR	Oct. 15, 1952
n. WILLIAM ROSS MACDONALD	May 12, 1953
n. GEORGE ALEXANDER DREW	May 12, 1953
n. JOHN WHITNEY PICKERSGILL	June 12, 1953
n. JEAN LESAGE	Sept. 17, 1953
n. GEORGE CARLYLE MARLER	July 1, 1954
n. ROCH PINARD	July 1, 1954
n. PAUL THEODORE HELLYER	Apr. 26, 1957
Hon. JOHN GEORGE DIEFENBAKER	June 21, 1957
n. HOWARD CHARLES GREEN	June 21, 1957
n. DONALD METHUEN FLEMING	June 21, 1957
n. GEORGE HEES	June 21, 1957
n. LÉON BALCER	June 21, 1957
n. GEORGE RANDOLPH PEARKES	June 21, 1957
n. GORDON CHURCHILL	June 21, 1957
n. EDMUND DAVIE FULTON	June 21, 1957
n. DOUGLAS SCOTT HARKNESS	June 21, 1957
n. ELLEN LOUKS FAIRCLOUGH	June 21, 1957
n. JOHN ANGUS MACLEAN	June 21, 1957
n. MICHAEL STARR	June 21, 1957
n. WILLIAM MCLEAN HAMILTON	June 21, 1957
n. JAMES MACKERRAS MACDONNELL	June 21, 1957
n. WILLIAM JOSEPH BROWNE	June 21, 1957
n. JAY WALDO MONTEITH	Aug. 22, 1957
n. FRANCIS ALVIN GEORGE HAMILTON	Aug. 22, 1957
.R.H. The PRINCE PHILIP, Duke of Edinburgh	Oct. 14, 1957
n. HENRI COURTEMANCHE	May 12, 1958
n. DAVID JAMES WALKER	Aug. 20, 1959
n. JOSEPH-PIERRE-ALBERT SÉVIGNY	Aug. 20, 1959
n. HUGH JOHN FLEMMING	Oct. 11, 1960
n. NOËL DORION	Oct. 11, 1960
n. WALTER DINSDALE	Oct. 11, 1960
n. GEORGE ERNEST HALPENNY	Oct. 11, 1960
n. WALTER MORLEY ASELTINE	Dec. 28, 1961
n. LESLIE MISCAMPBELL FROST	Dec. 28, 1961
n. JACQUES FLYNN	Dec. 28, 1961
n. PAUL MARTINEAU	Aug. 9, 1962
n. RICHARD ALBERT BELL	Aug. 9, 1962
t. Hon. ROLAND MICHENER	Oct. 15, 1962
n. MARCEL-JOSEPH-AIMÉ LAMBERT	Feb. 12, 1963
n. THÉOGÈNE RICARD	Mar. 18, 1963
n. FRANK CHARLES MCGEE	Mar. 18, 1963
n. MARTIAL ASSELIN	Mar. 18, 1963
Hon. WALTER LOCKHART GORDON	Apr. 22, 1963
Hon. MITCHELL WILLIAM SHARP[2]	Apr. 22, 1963
Hon. AZELLUS DENIS	Apr. 22, 1963
Hon. GEORGE JAMES MCILRAITH[2]	Apr. 22, 1963
Hon. WILLIAM MOORE BENIDICKSON	Apr. 22, 1963
Hon. ARTHUR LAING[2]	Apr. 22, 1963
Hon. MAURICE LAMONTAGNE	Apr. 22, 1963
Hon. LUCIEN CARDIN	Apr. 22, 1963
Hon. ALLAN JOSEPH MACEACHEN[2]	Apr. 22, 1963
Hon. JEAN-PAUL DESCHATELETS	Apr. 22, 1963
Hon. HÉDARD ROBICHAUD	Apr. 22, 1963
Hon. JOHN WATSON MACNAUGHT	Apr. 22, 1963
Hon. ROGER TEILLET	Apr. 22, 1963
Hon. JUDY V. LAMARSH	Apr. 22, 1963
Hon. CHARLES MILLS DRURY[2]	Apr. 22, 1963
Hon. JOHN ROBERT NICHOLSON	Apr. 22, 1963
Hon. HARRY HAYS	Apr. 22, 1963
Rt. Hon. ROBERT TASCHEREAU	Apr. 26, 1963
Hon. JOHN JOSEPH CONNOLLY	Feb. 3, 1964
Hon. MAURICE SAUVÉ	Feb. 3, 1964
Hon. YVON DUPUIS	Feb. 3, 1964
Hon. GEORGE STANLEY WHITE	June 25, 1964
Hon. MAJOR JAMES WILLIAM COLDWELL	June 25, 1964
Hon. EDGAR JOHN BENSON[2]	June 29, 1964
Hon. LÉO ALPHONSE JOSEPH CADIEUX[2]	Feb. 15, 1965
Hon. LAWRENCE T. PENNELL	July 7, 1965
Hon. JEAN-LUC PEPIN[2]	July 7, 1965
Hon. ALAN AYLESWORTH MACNAUGHTON	Oct. 25, 1965
Hon. JEAN MARCHAND[2]	Dec. 18, 1965
Hon. JOHN JAMES GREENE[2]	Dec. 18, 1965
Hon. JOSEPH JULIEN JEAN-PIERRE CÔTÉ[2]	Dec. 18, 1965
Hon. JOHN NAPIER TURNER[2]	Dec. 18, 1965
Hon. MAURICE BOURGET	Feb. 22, 1966
Rt. Hon. PIERRE ELLIOTT TRUDEAU[3]	Apr. 4, 1967
Hon. JOSEPH-JACQUES-JEAN CHRÉTIEN[2]	Apr. 4, 1967
Hon. PAULINE VANIER	Apr. 11, 1967
Hon. JOHN PARMENTER ROBARTS	July 5, 1967
Hon. LOUIS J. ROBICHAUD	July 5, 1967
Hon. DUFFERIN ROBLIN	July 5, 1967
Hon. WILLIAM ANDREW CECIL BENNETT	July 5, 1967
Hon. ALEXANDER B. CAMPBELL	July 5, 1967
Hon. WILBERT ROSS THATCHER	July 5, 1967
Hon. ERNEST CHARLES MANNING	July 5, 1967
Hon. JOSEPH ROBERT SMALLWOOD	July 5, 1967
Hon. ROBERT L. STANFIELD	July 7, 1967
Rt. Hon. JOHN ROBERT CARTWRIGHT	Sept. 4, 1967
Hon. CHARLES RONALD MCKAY GRANGER	Sept. 25, 1967
Hon. BRYCE STUART MACKASEY[2]	Feb. 9, 1968
Hon. DONALD STOVEL MACDONALD[2]	Apr. 20, 1968
Hon. JOHN CARR MUNRO[2]	Apr. 20, 1968
Hon. GÉRARD PELLETIER[2]	Apr. 20, 1968
Hon. JACK DAVIS[2]	Apr. 26, 1968
Hon. HORACE ANDREW OLSON[2]	July 6, 1968
Hon. JEAN-EUDES DUBÉ[2]	July 6, 1968
Hon. STANLEY RONALD BASFORD[2]	July 6, 1968
Hon. DONALD CAMPBELL JAMIESON[2]	July 6, 1968
Hon. ERIC WILLIAM KIERANS[2]	July 6, 1968
Hon. ROBERT KNIGHT ANDRAS[2]	July 6, 1968
Hon. JAMES ARMSTRONG RICHARDSON[2]	July 6, 1968
Hon. OTTO EMIL LANG[2]	July 6, 1968
Hon. SYDNEY JOHN SMITH	Oct. 10, 1968
Hon. HERBERT ESER GRAY[2]	Oct. 20, 1969
Hon. ROBERT DOUGLAS GEORGE STANBURY[2]	Oct. 20, 1969
Rt. Hon. JOSEPH HONORÉ GÉRALD FAUTEUX	Mar. 23, 1970

[1] Members of Her Majesty's Privy Council for Canada take rank *inter se* according to the dates of their being sworn in. [2] Ranks as a Member of the Cabinet. [3] Ranks as the Prime Minister of Canada.

4.—Duration and Sessions of Parliaments, 1958-69

NOTE.—Similar information for the 1st to the 12th Parliaments, covering the period from Confederation to 19 is given in the 1940 Year Book, p. 46; that for the 13th to 17th Parliaments in the 1945 edition, p. 53; for the 18th a 19th Parliaments in the 1957-58 edition, p. 46; and for the 20th to the 23rd Parliaments in the 1965 edition, p. 65.

Order of Parliament	Session	Date of Opening	Date of Prorogation	Days of Session	Sitting Days of House of Commons	Date of Election, Writs Returnable, Dissolution, and Length of Parliament
24th Parliament.....	1st	May 12, 1958	Sept. 6, 1958	117	93	Mar. 31, 1958[3]
	2nd	Jan. 15, 1959	July 18, 1959	185	127	Apr. 30, 1958[4]
	3rd	Jan. 14, 1960	Aug. 10, 1960	210	146	Apr. 19, 1962[5]
	4th	Nov. 17, 1960	Sept. 28, 1961	316[6]	174	3 y., 11m., 20 d.
	5th	Jan. 18, 1962	Apr. 18, 1962	91	65	
25th Parliament.....	1st	Sept. 27, 1962	Feb. 5, 1963[7]	132	72	June 18, 1962[3]
						July 18, 1962[4]
						Feb. 6, 1963[5]
						6 m., 20 d.
26th Parliament.....	1st	May 16, 1963	Dec. 21, 1963	220[8]	117	Apr. 8, 1963[3]
	2nd	Feb. 18, 1964	Apr. 3, 1965	411[9]	248	May 8, 1963[4]
	3rd	Apr. 5, 1965	Sept. 8, 1965[10]	157[11]	53	Sept. 8, 1965[5]
						2 y., 5 m., 1 d.
27th Parliament.....	1st	Jan. 18, 1966	May 8, 1967	476[12]	250	Nov. 8, 1965[3]
	2nd	May 8, 1967	Apr. 23, 1968	352[13]	155	Dec. 9, 1965[4]
						Apr. 23, 1968[5]
						2 y., 5 m., 15 d.
28th Parliament.....	1st	Sept. 12, 1968	Oct. 22, 1969	386[14]	199[15]	June 25, 1968[3]
	2nd	Oct. 23, 1969	...	...	...	July 25, 1968[4]

[1] The ordinary legal limit of duration for each Parliament is five years. [2] Duration of Parliament in yea months and days. The life of a Parliament is counted from the date of return of election writs to the date of d solution, both days inclusive (BNA Act, Sect. 50). [3] Date of general election. [4] Writs returnab [5] Dissolution of Parliament. [6] Includes long adjournment from July 13 to Sept. 7, 1961. [7] Governme defeated in House of Commons on want of confidence motion. [8] Includes long adjournment from Aug. 2 Sept. 30, 1963. [9] Includes long adjournment from Dec. 18, 1964 to Feb. 16, 1965. [10] House adjourned June 30 until Sept. 27 but dissolved on Sept. 8, 1965. [11] Includes long adjournment from June 30 to Sept. superseded by dissolution on Sept. 8, 1965. [12] Includes 18-day Christmas adjournment, 11-day Easter adjou ment, and two long adjournments from July 14 to Aug. 29 and Sept. 9 to Oct. 5. [13] Includes adjournment fr July 7, 1967 to Sept. 25, 1967; Christmas adjournment from Dec. 21, 1967 to Jan. 22, 1968; and Easter adjournme from Mar. 27, 1968 to Apr. 23, 1968. [14] Includes Christmas adjournment from Dec. 20, 1968 to Jan. 14, 19 Easter adjournment from Apr. 2, 1969 to Apr. 14, 1969; and summer adjournment from July 25, 1969 to Oct. 22, 19 [15] Includes two days devoted to Committee work.

Membership in the Privy Council is for life. As of May 1, 1970, there were 1 members, including the 30 Cabinet Ministers of the Government of the Day, form Cabinet Ministers, various members of the Royal Family, past and present Commonweal Prime Ministers, Premiers of provinces, former Speakers of the Senate and the House Commons of Canada and a few distinguished civilians. A member of the Privy Coun of Canada is styled "Honourable" and may use the initials "P.C." after his name. member of the Privy Council of the United Kingdom is styled "Right Honourable". T Governor General, the Chief Justice of Canada and the Prime Minister of Canada aut matically assume the title "Right Honourable" on assumption of office.

The Privy Council as a whole has met on only a few ceremonial occasions but, already stated, its constitutional responsibilities to advise the Crown on matters respecti the Government of Canada are performed exclusively by the Committee of the Privy Coun (the Cabinet). The legal instruments through which executive authority is exercis are called Orders in Council. The procedure is for the Committee of the Privy Coun to make a submission to the Governor General for his approval which he is obliged to give almost all circumstances; with this approval, the submission becomes an Order in Counc Meetings of the Committee of the Privy Council or a sub-committee of this Committ are held without formal ceremony.

The office of the President of the Privy Council was originally occupied, more often n not, by the Prime Minister but from time to time, especially in recent years, it has been upied by another Minister. On July 5, 1968, the Prime Minister explained that the umbent of the office of President of the Privy Council would also be the Government der in the House of Commons, with the broad responsibility of directing the business he House, including such matters as the supervision of the Government's replies to stions in the House and the parliamentary returns in general, and also a special responsi- y on behalf of the Government of ensuring that Parliament, through its operations and anization of business, can effectively discharge its vital role in the Canadian political cess under the increasing pressure of modern government.

The Prime Minister.—The Prime Minister is the leader of the political Party re- sted by the Governor General to form the Government, which almost always means t he is the leader of the Party with the strongest representation in the House of Commons. position is one of exceptional authority, which stems in part from the success of the Party an election and the role imputed to him for that success. The Prime Minister chooses Cabinet. When a member of his Cabinet resigns, the remainder of the Cabinet is isturbed; when the Prime Minister vacates his office, this act normally carries with it resignation of all those in the Cabinet.

A source of the authority of the Prime Minister lies in his prerogative to recommend the olution of Parliament. This prerogative, which in most circumstances permits him precipitate an election, is a source of considerable power both in his dealings with his eagues and with the opposition parties in the House of Commons.

Another source of the Prime Minister's authority derives from the appointments which recommends. These include Privy Councillors, Cabinet Ministers, Lieutenant- vernors of the provinces, Provincial administrators, Speaker of the Senate, Chief Justices all courts, and Senators. The Prime Minister also recommends the appointment of a y Governor General to the Sovereign, although this normally follows consultation with Cabinet.

The Prime Ministers since Confederation are listed in Table 5.

5.—Prime Ministers since Confederation, 1867

inistry	Name	Length of Administration
1	Rt. Hon. Sir John Alexander Macdonald	July 1, 1867 — Nov. 5, 1873
2	Hon. Alexander Mackenzie	Nov. 7, 1873 — Oct. 16, 1878
3	Rt. Hon. Sir John Alexander Macdonald	Oct. 17, 1878 — June 6, 1891
4	Hon. Sir John Joseph Caldwell Abbott	June 16, 1891 — Nov. 24, 1892
5	Rt. Hon. Sir John Sparrow David Thompson	Dec. 5, 1892 — Dec. 12, 1894
6	Hon. Sir Mackenzie Bowell	Dec. 21, 1894 — Apr. 27, 1896
7	Rt. Hon. Sir Charles Tupper	May 1, 1896 — July 8, 1896
8	Rt. Hon. Sir Wilfrid Laurier	July 11, 1896 — Oct. 6, 1911
9	Rt. Hon. Sir Robert Laird Borden	Oct. 10, 1911 — Oct. 12, 1917 (Conservative Administration)
10	Rt. Hon. Sir Robert Laird Borden	Oct. 12, 1917 — July 10, 1920 (Unionist Administration)
11	Rt. Hon. Arthur Meighen	July 10, 1920 — Dec. 29, 1921 (Unionist—"National Liberal and Conservative Party")
12	Rt. Hon. William Lyon Mackenzie King	Dec. 29, 1921 — June 28, 1926
13	Rt. Hon. Arthur Meighen	June 29, 1926 — Sept. 25, 1926
14	Rt. Hon. William Lyon Mackenzie King	Sept. 25, 1926 — Aug. 6, 1930
15	Rt. Hon. Richard Bedford Bennett	Aug. 7, 1930 — Oct. 23, 1935
16	Rt. Hon. William Lyon Mackenzie King	Oct. 23, 1935 — Nov. 15, 1948
17	Rt. Hon. Louis Stephen St. Laurent	Nov. 15, 1948 — June 21, 1957
18	Rt. Hon. John George Diefenbaker	June 21, 1957 — Apr. 22, 1963
19	Rt. Hon. Lester Bowles Pearson	Apr. 22, 1963 — Apr. 20, 1968
20	Rt. Hon. Pierre Elliott Trudeau	Apr. 20, 1968 — ...

The Cabinet.—As stated on p. 71, the Cabinet's primary function in the Canadi political system is to determine priorities among the demands expressed by the people a to determine the policies to meet those demands. The Cabinet is a committee of Minist chosen by the Prime Minister, generally from among members of the House of Commo although there have usually been one or two Ministers chosen from the Senate including t Leader of the Government in the Senate. It is unusual for a Senator to head a departme of government because the Constitution provides that measures for appropriating pub funds or imposing taxes must originate in the House of Commons and, as a result, alm all important legislation is initiated in the House of Commons. Also, another Minister the House of Commons must speak on behalf of a Senator who heads a department, respect of its affairs.

Members of the Twentieth Ministry as at May 1, 1970, are given in Table 6. Salari allowances and pensions of Cabinet Ministers are given at pp. 95-96.

6.—Members of the Twentieth Ministry, as at May 1, 1970[1]

(According to precedence of Ministers)

NOTE.—A complete list of the members of Federal Ministries from Confederation to 1913 appears in the 1912 Y Book, pp. 422-429. Later Ministries will be found in subsequent editions.

Office	Occupant	Date of First Appointment	Date of Appointme to Presen Portfolio
Prime Minister	Rt. Hon. PIERRE ELLIOTT TRUDEAU..	Apr. 4, 1967	Apr. 20, 1
Leader of the Government in the Senate...	Hon. PAUL JOSEPH JAMES MARTIN....	Apr. 22, 1963	Apr. 22, 1
Secretary of State for External Affairs.....	Hon. MITCHELL SHARP.....	Apr. 22, 1963	Apr. 22, 1
Solicitor General of Canada.....	Hon. GEORGE JAMES MCILRAITH.....	Apr. 22, 1963	July 5, 1
Minister of Public Works.....	Hon. ARTHUR LAING.....	Apr. 22, 1963	July 5, 1
Minister of Manpower and Immigration....	Hon. ALLAN JOSEPH MACEACHEN.....	Apr. 22, 1963	Juy 5, 1
President of the Treasury Board.....	Hon. CHARLES MILLS DRURY.....	Apr. 22, 1963	July 5, 1
Minister of Finance.....	Hon. EDGAR JOHN BENSON.....	June 29, 1964	Apr. 22, 1
Minister of National Defence.....	Hon. LÉO ALPHONSE JOSEPH CADIEUX.	Feb. 15, 1965	Apr. 22, 1
Minister of Industry, Trade and Commerce	Hon. JEAN-LUC PEPIN.....	Dec. 17, 1965	July 5, 1
Minister of Regional Economic Expansion..	Hon. JEAN MARCHAND.....	Dec. 17, 1965	July 5, 1
Minister of Energy, Mines and Resources...	Hon. JOHN JAMES GREENE.....	Dec. 17, 1965	July 5, 1
Minister of National Revenue.....	Hon. JOSEPH JULIEN JEAN-PIERRE CÔTÉ.....	Dec. 17, 1965	July 5, 1
Minister of Justice and Attorney General of Canada.....	Hon. JOHN NAPIER TURNER.....	Dec. 17, 1965	July 5, 1
Minister of Indian Affairs and Northern Development.....	Hon. JEAN CHRÉTIEN.....	Apr. 4, 1967	July 5, 1
Minister of Labour.....	Hon. BRYCE STUART MACKASEY.....	Feb. 9, 1968	July 5, 1
President of the Queen's Privy Council for Canada.....	Hon. DONALD STOVEL MACDONALD....	Apr. 22, 1968	July 5, 1
Minister of National Health and Welfare...	Hon. JOHN CARR MUNRO.....	Apr. 22, 1968	July 5, 1
Secretary of State of Canada.....	Hon. GÉRARD PELLETIER.....	Apr. 22, 1968	July 5, 1
Minister of Fisheries and Forestry.....	Hon. JACK DAVIS.....	Apr. 26, 1968	July 5, 1
Minister of Agriculture.....	Hon. HORACE ANDREW OLSON.....	July 5, 1968	July 5, 1
Minister of Veterans Affairs.....	Hon. JEAN-EUDES DUBÉ.....	July 5, 1968	July 5, 1
Minister of Consumer and Corporate Affairs	Hon. STANLEY RONALD BASFORD.....	July 5, 1968	July 5, 1
Minister of Transport.....	Hon. DONALD CAMPBELL JAMIESON....	July 5, 1968	May 5, 1
Postmaster General and Minister of Communications.....	Hon. ERIC WILLIAM KIERANS.....	July 5, 1968	July 5, 1
Minister without Portfolio.....	Hon. ROBERT KNIGHT ANDRAS.....	July 5, 1968	July 5, 1
Minister of Supply and Services.....	Hon. JAMES ARMSTRONG RICHARDSON.	July 5, 1968	May 5, 1
Minister without Portfolio.....	Hon. OTTO EMIL LANG.....	July 5, 1968	July 5, 1
Minister without Portfolio.....	Hon. HERBERT ESER GRAY.....	Oct. 20, 1969	Oct. 20, 1
Minister without Portfolio.....	Hon. ROBERT DOUGLAS GEORGE STANBURY.....	Oct. 20, 1969	Oct. 20, 1

[1] Any change occurring between May 1, 1970 and the date of going to press of this volume will be carried in Appendix.

Each Cabinet Minister usually assumes responsibility for one of the departments government, although a Minister may hold more than one portfolio at the same time he may hold one or more portfolios and one or more acting portfolios. A Minister witho portfolio may occasionally be asked to assume acting responsibility for a portfolio, in whi capacity he exercises the same authority as if he were the Minister designate. A Minis

ithout portfolio may be invited to join the Cabinet because the Prime Minister wishes to ave him in the Cabinet but without the heavy duties of running a department, or he may e invited to join the Cabinet to provide a suitable balance of regional representation. ecause of the cultural and geographical diversity that exists in Canada, it is necessary or the Prime Minister to give more attention to the representational aspect of his Cabinet han, perhaps, his counterparts in many other countries. A Minister without portfolio may lso take responsibilities for special areas of policy or to assist Ministers with particular epartmental responsibilities. Currently (1970) there are three Ministers without portfolio hose special assignments in the Government include, respectively, wheat, foreign invest- ent and citizenship.

The Cabinet Committee System

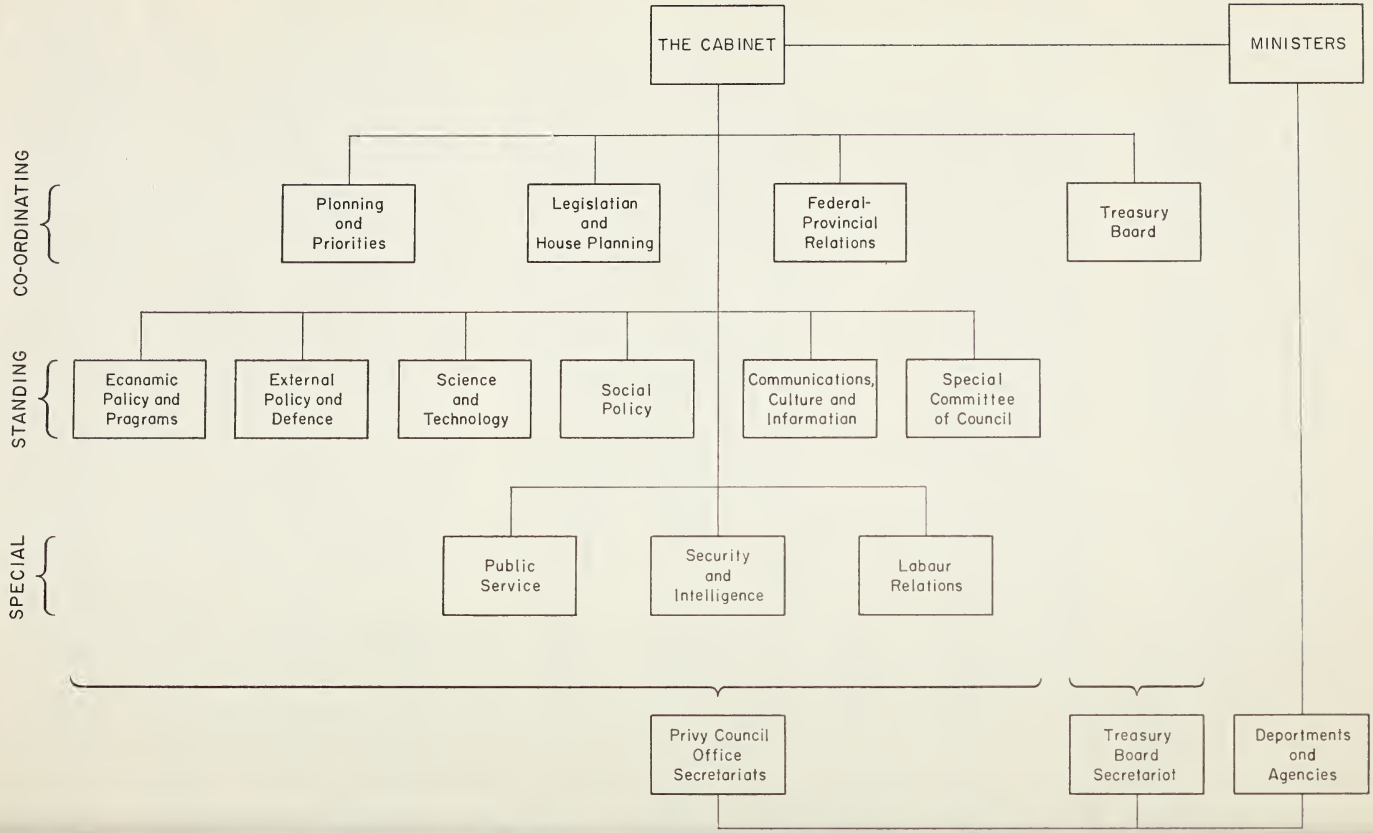
In Canada, almost all executive acts of the Government are carried out in the name of he Governor in Council. The Committee of the Privy Council (the Cabinet) makes sub- issions to the Governor General for his approval, and he is bound by the Constitution in early all circumstances to accept them. About 2,500 Orders in Council were enacted in 969 and, although some were of a fairly routine nature and did not require much discussion n Cabinet of the policy underlying them, others were of major significance and required xtensive deliberation, sometimes covering months of meetings of officials and Cabinet ommittees, as well as of the full Cabinet. In addition to the determination of the policy nderlying the executive acts of the Government, there are literally hundreds of other policy ssues that must be resolved during the course of a year. The policy underlying each piece f legislation must be considered in Cabinet and when that is approved and legislation is rafted, it must be considered in detail so that each clause and each punctuation mark as been approved by Cabinet. Recently, between 40 and 60 Bills have been considered by abinet during the course of a parliamentary session. Proposals for sweeping reform of arge areas of government organization or administration, and policy to be adopted in undamental constitutional changes or at a major international conference are among the ssues which, on occasion, demand such extensive and detailed consideration.

It is clear that the nature and volume of policy issues to be decided on by Cabinet do ot lend themselves to discussion by 25 or 30 Ministers. The first Cabinet committee ystem was established after the outbreak of World War II but, since that time and more articularly in recent years, growing demands placed on the executive have stimulated the evelopment of new approaches to the devolution of the responsibilities of Cabinet to ub-committees thereof.

Cabinet committees tend to have a membership of fewer than 10 Ministers and therefore rovide a forum capable of ensuring thorough study of policy proposals. The membership f Cabinet committees is confidential and the same rules of secrecy that apply to the eliberations of Cabinet apply to those of Cabinet committees. If it were otherwise, there might be a tendency for them to develop an importance and authority of their own which would be inconsistent with the principle of the collective responsibility of Ministers. The Prime Minister determines the establishment of Cabinet committees and their composition and terms of reference. Ministers may invite one or two officials as advisers during Cabinet committee meetings. The secretariat of the Cabinet committees is provided by the Privy Council Office and the Secretary of a Cabinet committee is usually also an Assistant Secretary to the Cabinet. The Treasury Board, which is a Cabinet committee—or more precisely a sub-committee of the Committee of the Privy Council—is the only exception: it has its own secretariat headed by a secretary who has the status of a deputy minister.

Under the direction of the Prime Minister, the Secretary to the Cabinet prepares Cabinet agenda and refers memoranda to Cabinet to the appropriate Cabinet committee for study and report to the full Cabinet. Except where the Prime Minister instructs otherwise, all memoranda to Cabinet are submitted under the signature of the Minister concerned.

THE CABINET COMMITTEE SYSTEM



The terms of reference of Cabinet committees cover virtually the total area of government responsibility. All memoranda to Cabinet are first considered by a Cabinet committee, except when they are of exceptional urgency or when the Prime Minister otherwise directs, in which case an item may be considered immediately by the full Cabinet.

On Apr. 30, 1968, the Prime Minister established a new format for Cabinet committees. The trend in previous years was for the development of many committees to meet immediate requirements which eventually disappeared. As a result there was a proliferation of committees and the terms of reference of some became irrelevant in terms of the demands placed on the Cabinet. The new system reduced the number of standing committees of Cabinet to eight—four subject-matter committees and four co-ordinating committees. The four subject-matter committees set up were: External Policy and Defence; Economic Policy and Programs; Communications, Works and Urban Affairs; and Social Policy. The four co-ordinating committees were: Priorities and Planning; Legislation and House Planning; Federal-Provincial Relations; and the Treasury Board. The Treasury Board is a statutory committee of the Committee of the Privy Council and under the Financial Administration Act has the status of a department. The following chart indicates the relationship of these committees to the Cabinet process.

In 1969, the arrangement established in 1968 was further modified. The co-ordinating committees of Cabinet remained, but the standing committees were: External Policy and Defence; Science Policy and Technology; Economic Policy and Programs; Social Policy; and Culture and Information. These committees meet on a regular basis. In addition, there are four special committees of the Cabinet which meet as required: the Special Committee of Council which considers all submissions to the Governor in Council on behalf of the "Committee of the Privy Council", and the Cabinet committees on the Public Service, Security and Intelligence, and Labour Relations.

Although the importance of the Cabinet committee system may vary from Government to Government, evidence of the utility of this system is the growing reliance that has been placed on Cabinet committees since the system was established at the end of the Second World War. The following is a brief outline of the involvement of Cabinet and Cabinet committees in respect of a piece of legislation that the Government ultimately introduces into the House of Commons or the Senate.

Either on the initiative of a Minister or his departmental officials, a policy proposal is prepared, the implementation of which will require new legislation or the amendment of existing legislation. The policy proposal is submitted, under the Minister's signature, for consideration by the appropriate subject-matter committee. If approval is given, the proposal goes forward to Cabinet for confirmation. If Cabinet confirms the Committee's decision, the Department of Justice is given instructions by the Minister who made the proposal to prepare a draft Bill expressing in legal terms the intent of the policy proposal. If the draft Bill meets with the Minister's approval, he submits it to the Cabinet Committee on Legislation and House Planning where it is examined from a legal point of view rather than on the basis of its underlying policy. If the Cabinet Committee agrees that the Bill is acceptable in all respects and that it could be introduced into Parliament, it so reports to Cabinet and Cabinet decides whether to confirm the Committee's decision. If confirmation is given, the Prime Minister initials the Bill and it is then introduced either into the Senate or the House of Commons, depending on constitutional and political considerations.

The order and manner in which a Bill is considered in Parliament is the responsibility of the President of the Privy Council and House Leader who negotiates these matters with his counterparts in the opposition Parties. If a Bill is to be introduced into the Senate, the House Leader will consider questions such as timing and tactics with the Leader of the Government in the Senate, who in turn will negotiate the consideration of the Bill with his counterpart in the Senate.

The Privy Council Office.—The Privy Council is a secretariat which provides staff support to the Select Committee of the Privy Council and to the Cabinet. For the purposes of the Financial Administration Act, it is considered a department of government with duties as described on p. 147. The Privy Council Office provides secretariats to serve the Cabinet, the Select Committee of the Privy Council and their various sub-committees. Since the Prime Minister is, in effect, chairman of the Cabinet, he is the Minister responsible for the Privy Council Office. The public servant who directs the work of the Privy Council Office is known as the Clerk of the Privy Council and Secretary to the Cabinet. He is the senior member of the Public Service.

Parliamentary Secretaries.—The Parliamentary Secretaries Act, which came into force in June 1959, provides for the appointment of 16 Parliamentary Secretaries from among the members of the House of Commons to assist Ministers in the performance of their duties. A Parliamentary Secretary works under the direction of his Minister and has no legal authority in respect of the department with which he is associated, nor is he given acting responsibility or any of the powers, duties and functions of a Minister in the event of his Minister's absence or incapacity. Parliamentary Secretaries are appointed by the Prime Minister and hold office for 12 months.

At May 1, 1970, the following Parliamentary Secretaries were in office:—

Secretary	*Minister*
James E. Walker	Prime Minister
Jean-Pierre Goyer	Secretary of State for External Affairs
Charles L. Caccia	President of the Treasury Board
Rosaire Gendron	Minister of Manpower and Immigration
David W. Groos	Minister of National Defence
Martin P. O'Connell	Minister of Regional Economic Expansion
Robert J. Orange	Minister of Energy, Mines and Resources
Jean-Charles Cantin	Minister of Justice
Russell C. Honey	Minister of Indian Affairs and Northern Development
James McNulty	Minister of Labour
Yves Forest	President of the Privy Council
Stanley Haidasz	Minister of National Health and Welfare
Eugene F. Whelan	Minister of Fisheries and Forestry
Florian Côté	Minister of Agriculture
Paul Langlois	Minister of Consumer and Corporate Affairs
Gérard Loiselle	Minister of Transport

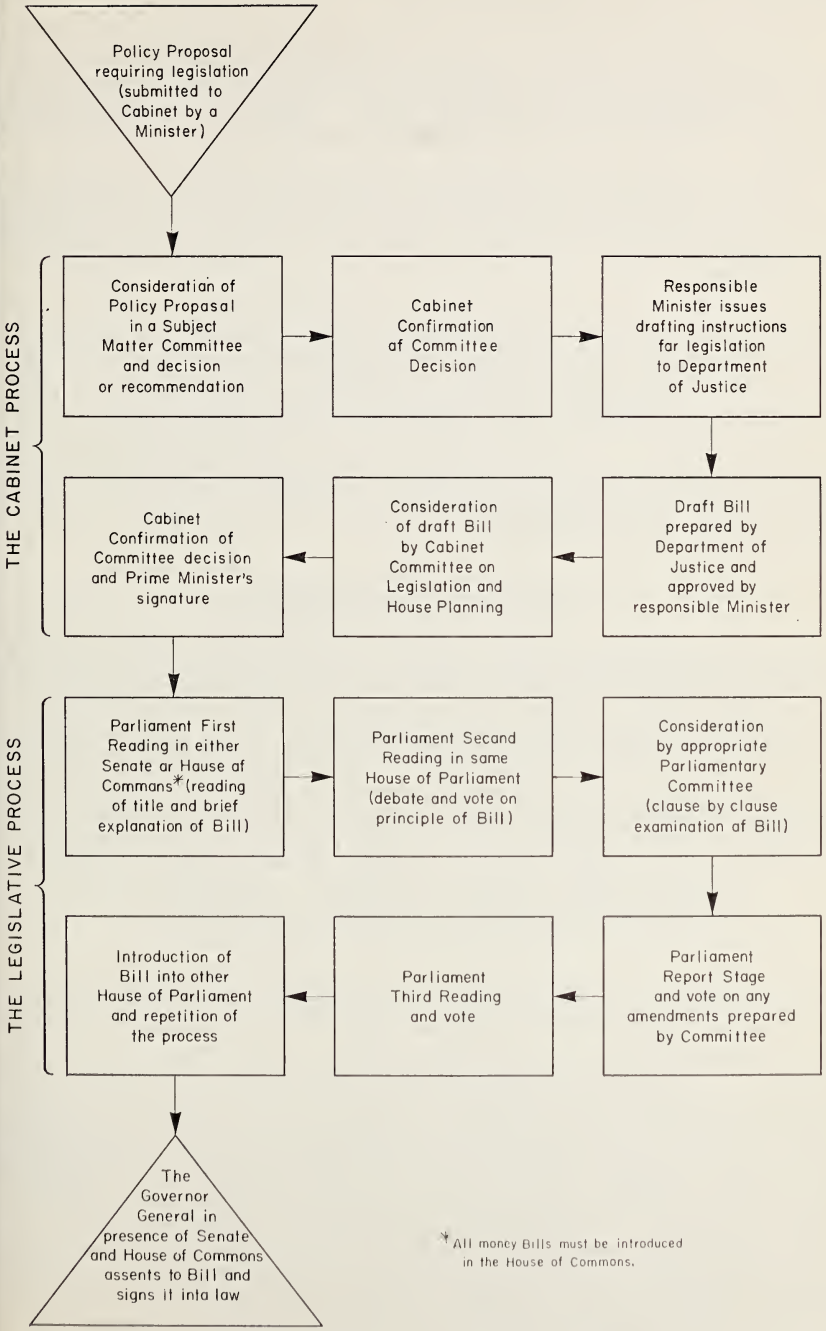
The Passage of Legislation

If a Bill is introduced in the House of Commons and is approved there, it must then be introduced into the Senate and follow a procedure similar to that followed in the House. If a Bill is first introduced into the Senate, the reverse procedure is followed. There are three types of Bills: (1) public Bills introduced by the Government; (2) public Bills introduced by private members of Parliament; and (3) private Bills introduced by private members of Parliament. Each type is treated in a slightly different manner, and there are even differences in procedure when the House deals with Government Bills introduced pursuant to "supply" and "ways and means" motions on the one hand, and other Government Bills on the other. The following is the procedure for a typical Government Bill which has been introduced in the House of Commons.

The sponsoring Minister gives notice that he intends to introduce a Bill on a given subject. Not less than 48 hours later he moves for leave to introduce the Bill and that the Bill be given first reading. This is permitted automatically because introduction or first reading of a Bill does not imply approval of any sort and it is only after first reading that the Bill is ordered to be printed for distribution to the members.

At a later sitting the Minister moves that the Bill be given second reading and that it be referred to an appropriate committee of the House of Commons. A favourable vote on the motion for second reading represents approval of the principle of the Bill so there is often an extensive debate, which, according to the standing orders of the House of Commons,

PASSAGE OF LEGISLATION


Policy Proposal requiring legislation (submitted to Cabinet by a Minister)
THE CABINET PROCESS
Consideration of Policy Proposal in a Subject Matter Committee and decision or recommendation
Cabinet Confirmation of Committee Decision
Responsible Minister issues drafting instructions for legislation to Department of Justice
Draft Bill prepared by Department of Justice and approved by responsible Minister
Consideration of draft Bill by Cabinet Committee on Legislation and House Planning
Cabinet Confirmation of Committee decision and Prime Minister's signature
THE LEGISLATIVE PROCESS
Parliament First Reading in either Senate or House of Commons* (reading of title and brief explanation of Bill)
Parliament Secand Reading in same House of Parliament (debate and vote on principle of Bill)
Consideration by appropriate Parliamentary Committee (clause by clause examination of Bill)
Parliament Report Stage and vote on any amendments prepared by Committee
Parliament Third Reading and vote
Introduction of Bill into other House of Parliament and repetition of the process
The Governor General in presence of Senate and House of Commons assents to Bill and signs it into law

*All money Bills must be introduced in the House of Commons.

must be confined to the principle of the Bill. The debate culminates in a vote which, favourable, results in the Bill being referred to the appropriate committee of the Hous where it is given clause-by-clause consideration.

At the committee stage, expert witnesses and interested parties may be invited to gi testimony pertaining to the Bill, and the proceedings of the committee may cover mar weeks. Upon completion of its consideration of the Bill, the House committee prepares report which it submits to the House of Commons. The House must then decide wheth to accept the committee's report, including any amendments that the committee has ma to the Bill.

At the report stage any member may, on giving 24 hours notice, move an amendme to the Bill, and all such amendments are debated and put to a vote. Following that, motion "that the bill be concurred in" or "that the bill, as amended, be concurred in", put to the vote.

Following this report stage, the Minister moves that the Bill be given third readi and passage. Debate of this motion is limited to whether the Bill should be given thi reading. Amendments are permitted at this stage but they must be of a general natur similar to those allowed on second reading. If the vote is favourable, the Bill is then intr duced into the Senate where it goes through a somewhat similar process. (Since ea House has its own rules of procedure, the processes in the two may not be identical, and a not identical at this time.) At the end of this procedure, the Bill is presented to the Govern General for Royal Assent and for his signature. Depending on the provisions in the B itself, it may come into force when it is signed by the Governor General, on an appoint day, or when it is officially proclaimed.

Subsection 2.—The Legislature

The federal legislative authority is vested in the Parliament of Canada consisting The Queen, an Upper House styled the Senate, and the House of Commons. Bills ma originate in either the Senate or the House, subject to the provisions of Sect. 53 of th British North America Act, 1867, which provides that Bills for the appropriation of ar part of the public revenue or the imposition of any tax or impost shall originate in th House of Commons. Bills must pass both Houses and receive Royal Assent before b coming law. In practice, most public Bills originate in the House of Commons, althoug there has been a marked increase recently in the introduction of public Bills in the Senat at the instance of the Government, in order that Bills may be dealt with in the Sena while the Commons is engaged in other matters such as the debate on the Speech from th Throne. Private Bills usually originate in the Senate. The Senate may delay, amend even refuse to pass Bills sent to it from the Commons, but differences are usually settle without serious conflict. (See Chap. XXVII for current legislation.)

Under Sect. 91 of the British North America Acts, 1867 to 1964, the legislative autho ity of the Parliament of Canada extends to the following: the amendment of the Constitu tion of Canada (subject to certain exceptions—see p. 67); the public debt and property; th regulation of trade and commerce; unemployment insurance; the raising of money b any mode or system of taxation; the borrowing of money on the public credit; postal servic the Census and statistics; militia, military and naval service, and defence; the fixing of an providing for the salaries and allowances of civil and other officers of the Governmen of Canada; beacons, buoys, lighthouses and Sable Island; navigation and shipping; qua antine and the establishment and maintenance of marine hospitals; sea coast and inlan fisheries; ferries between a province and any British or foreign country or between tw provinces; currency and coinage, banking, incorporation of banks and the issue of pape money; savings banks; weights and measures; bills of exchange and promissory note interest; legal tender; bankruptcy and insolvency; patents of invention and discovery copyrights; Indians and lands reserved for the Indians; naturalization and aliens; marriag and divorce; the criminal law, except the constitution of courts of criminal jurisdictio

t including the procedure in criminal matters; the establishment, maintenance and anagement of penitentiaries; such classes of subjects as are expressly excepted in the umeration of the classes of subjects by these Acts assigned exclusively to the legislatures the provinces.

Under Sect. 95, the Parliament of Canada may make laws in relation to agriculture d immigration concurrently with provincial legislatures although federal legislation is ramount in the event of conflict. By the British North America Act, 1951 (Br. Stat. 50-51, c. 32) it is declared that the Parliament of Canada may make laws in relation to l age pensions in Canada but no such law shall affect the operation of any provincial vs in relation to old age pensions. By the British North America Act, 1964, which ceived Royal Assent on July 31, 1964, this amendment was extended at the request of e Parliament of Canada (June 19, 1964) to permit the payment of supplementary benefits, cluding survivors' and disability benefits irrespective of age, under a contributory pension an.

The Senate.—From an original membership of 72 at Confederation, the Senate, rough the addition of new provinces and the general growth of population, now has 102 embers, the latest change in representation having been made on the admission of New- undland to Confederation in 1949. The growth of representation in the Senate is sum- arized by province in Table 7.

Senators are appointed by the Governor General by instrument under the Great Seal Canada. The actual power of appointing Senators resides by constitutional usage in the ime Minister whose advice the Governor General accepts in this regard. Until the ssage of "An Act to make provision for the retirement of members of the Senate" (SC 65, c.4), assented to on June 2, 1965, Senators were appointed for life; that Act fixes at years the age at which any person appointed to the Senate after the coming into force the Bill will cease to hold his place in the Senate.

In each of the four main divisions of Canada except Quebec, Senators represent the ole of the province for which they are appointed; in Quebec, one Senator is appointed for ch of the 24 electoral divisions of what was formerly Lower Canada. The deliberations the Senate are presided over by a Speaker appointed by the Governor General in Council effect by the Government) and government business in the Senate is sponsored by the overnment Leader in the Senate.

The powers of the Senate, in all respects except one, are co-extensive with those of e House of Commons. The one exception is that under the Canadian Constitution all oney Bills", i.e., Bills to impose taxes or appropriate public moneys, must originate

7.—Representation in the Senate since Confederation, 1867

Province	1867	1870	1871	1873	1882	1887	1892	1903	1905	1915–1948	1949–1970
tario	24	24	24	24	24	24	24	24	24	24	24
ebec	24	24	24	24	24	24	24	24	24	24	24
antic Provinces	24	24	24	24	24	24	24	24	24	24	30
Nova Scotia	*12*	*12*	*12*	*10*	*10*	*10*	*10*	*10*	*10*	*10*	*10*
New Brunswick	*12*	*12*	*12*	*10*	*10*	*10*	*10*	*10*	*10*	*10*	*10*
Prince Edward Island	...	...	...	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*
Newfoundland	...	...	...	...	...	...	...	...	...	...	*6*
stern Provinces	...	2	5	5	6	8	9	11	15	24	24
Manitoba	...	*2*	*2*	*2*	*3*	*3*	*4*	*4*	*4*	*6*	*6*
British Columbia	...	...	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*6*	*6*
Saskatchewan	...	...	...	...	...	*2*	*2*	*4*	*4*	*6*	*6*
Alberta									*4*	*6*	*6*
Totals	**72**	**74**	**77**	**77**	**78**	**80**	**81**	**83**	**87**	**96**	**102**

8.—Members of the Senate, by Province, as at May 1, 1970[1]

Speaker..... Hon. Jean-Paul Deschatelets
Leader of the Government..... Hon. Paul Martin
Leader of the Opposition..... Hon. Jacques Flynn
Clerk of the Senate and Clerk of the Parliaments..... Robert Fortier

(Ranked according to seniority, by province. All Senators are entitled to the designation "Honourable".)

Province and Name of Senator	P.O. Address
Newfoundland—	
(6 Senators)	
Basha, Michael G.	Curling
Hollett, Malcolm	St. John's
Cook, Eric	St. John's
Carter, Chesley William	St. John's
Duggan, James	St. John's
Petten, William John	St. John's
Prince Edward Island—	
(4 Senators)	
Inman, Florence Elsie	Montague
MacDonald, John Joseph	Charlottetown
Phillips, Orville Howard	Alberton
Kickham, Thomas Joseph	Souris
Nova Scotia—	
(8 Senators—2 vacancies)	
Kinley, John James	Lunenburg
Isnor, Gordon B.	Halifax
Smith, Donald	Liverpool
Connolly, Harold	Halifax
Blois, Frederick Murray	Truro
Macdonald, John Michael	North Sydney
Welch, Frank C.	Wolfville
Urquhart, Earl Wallace	West Bay
New Brunswick—	
(10 Senators)	
Burchill, George Percival	South Nelson
Fergusson, Muriel McQueen	Fredericton
McGrand, Fred A.	Fredericton Jct.
Savoie, Calixte F.	Moncton
Fournier, Edgar	Iroquois
Rattenbury, Nelson	Saint John
McElman, Charles Robert	Fredericton
McLean, Donald Allan	Black's Harbour
Michaud, Hervé J.	Fredericton
Robichaud, Hédard	Caraquet
Quebec—	
(21 Senators—3 vacancies)	
Gouin, Léon Mercier	Montreal
Dessureault, Jean-Marie	Quebec
Fournier, Sarto	Montreal
Molson, Hartland de Montarville	Montreal
Lefrançois, J. Eugène	Montreal
Méthot, Léon	Trois-Rivières
Quart, Josie Alice Dinan	Quebec
Beaubien, Louis Philippe	Montreal
Flynn, Jacques	Quebec
Bourget, Maurice	Lévis
Gélinas, Louis P.	Montreal
Bourque, Romuald	Outremont
Denis, Azellus	Montreal
Deschatelets, Jean-Paul	Montreal
Macnaughton, Alan Aylesworth	Westmount
Langlois, J. C. Léopold	Quebec
Desruisseaux, Paul	Sherbrooke
Lamontagne, Maurice	Montreal
Phillips, Lazarus	Westmount
Eudes, Raymond	Montreal
Giguère, Louis de Gonzague	Montreal
Ontario—	
(22 Senators—2 vacancies)	
Hayden, Salter Adrian	Toronto
Paterson, Norman McLeod	Fort William
Roebuck, Arthur Wentworth	Toronto
Connolly, John J.	Ottawa
Croll, David A.	Toronto
White, George Stanley	Madoc
Sullivan, Joseph A.	Toronto
Choquette, Lionel	Ottawa
Willis, Harry A.	Toronto
O'Leary, M. Grattan	Ottawa
Grosart, Allister	Ottawa
Walker, David James	Toronto
Belisle, Rhéal	Sudbury
Lang, Daniel Aiken	Toronto
Aird, John Black	Toronto
Benidickson, William Moore	Kenora
Davey, Douglas Keith	Toronto
Thompson, Andrew Ernest	Kendal
Laird, Keith	Windsor
Kinnear, Mary Elizabeth	Port Colborne
Stanbury, Richard James	Toronto
Martin, Paul	Windsor
Manitoba—	
(3 Senators—3 vacancies)	
Haig, J. Campbell	Winnipeg
Yuzyk, Paul	Winnipeg
Everett, Douglas Donald	Winnipeg
Saskatchewan—	
(6 Senators)	
Aseltine, Walter M.	Rosetown
Boucher, William Albert	Prince Albert
Pearson, Arthur M.	Lumsden
McDonald, Alexander Hamilton	Regina
Argue, Hazen Robert	Kayville
Sparrow, Herbert Orville	North Battlefor
Alberta—	
(5 Senators—1 vacancy)	
Cameron, Donald	Edmonton
Gladstone, James	Cardston
Hastings, Earl Adam	Calgary
Hays, Harry William	Calgary
Prowse, James Harper	Edmonton
British Columbia—	
(1 Senator—5 vacancies)	
Nichol, John Lang	Vancouver

[1] Any change occurring between May 1, 1970 and the date of going to press of this volume will be carried in a Appendix and the Register of Official Appointments, Chap. XXVII, Pt. III.

he House of Commons. The concurrence of the Senate is necessary before any piece egislation, public or private, can become law. Government Bills, other than money s, may be introduced in either House. A substantial percentage of these are now intro- ed in the Senate where they may be freely discussed and amended and the House of mmons thus given the benefit of their prior scrutiny by the Senate.

The Senate also retains its traditional role in respect of legislation originating in the se of Commons, namely, to take a "sober second look" at such legislation. Amend- ts may be made thereto and such amendments are often concurred in by the House of mmons. If there is disagreement concerning such amendments and the disagreement ot resolved by a conference between representatives of the two Houses, the legislation not be further proceeded with.

The Senate provides a national forum for the discussion of public issues and the airing rievances from whatever part of Canada they may emanate. The Senate, through its committees and its participation in joint committees of both Houses, is particularly ve in making studies in depth on matters of public concern.

The House of Commons.—The British North America Act, 1867 provided that in ect of representation in the House of Commons the Province of Quebec should have fixed number of sixty-five members and that there should be assigned to each of the r provinces such a number of members as would bear the same proportion to the ber of its population as the number sixty-five bears to the number of the population uebec. This Act also provided that on the completion of a census in 1871 and of each equent decennial census the representation of the several provinces should be re- sted provided the proportionate representation of the provinces as prescribed by the were not thereby disturbed.

In the session of 1946 the House of Commons adopted a resolution stating that the t of the provisions of the British North America Act relating to representation had been satisfactory in that proportionate representation of the provinces according to ulation had not been maintained and that a more equitable apportionment of members he various provinces could be effected if readjustments were made on the basis of the ulation of all the provinces taken as a whole. The Act was amended accordingly in 6 to provide a new rule to regulate representation in the House of Commons. Generally king, representation was fixed as follows:—

> The membership assigned to each province shall be computed by dividing the total popu- lation of the provinces by two hundred and fifty-four and by dividing the population of each province by the quotient so obtained.

s rule, employed in the redistribution of representation made in 1947, was effective in General Election of 1949.

After the completion of the 1951 Census it was apparent that, as a result of a wartime t of population, a substantial reduction in the representation of the Province of Sas- chewan would ensue under the rules then regulating representation. Accordingly, n effort to eliminate sharp reductions in provincial representation from one census to ther, the British North America Act was again amended (RSC 1952, c. 304, Sect. 51) Canada Year Book 1963-64, p. 75) to ensure that the representation of any province ld not be reduced by more than 15 p.c. at any one readjustment, subject however to qualifications that the effect of the rule should not be to make the representation of a vince with a smaller population greater than any province with a larger population.

Subsequently in 1952, Parliament enacted RSC 1952, c. 334, effective in the General tion of 1953 and in each successive General Election down to that of the Twenty-

seventh Parliament (Nov. 8, 1965), which provided that representation in the House Commons should be on the following basis:—

> Sect. 2.—Eighty-five members of the House of Commons shall be elected for the Prov of Ontario, seventy-five for the Province of Quebec, twelve for the Province of Nova Sc ten for the Province of New Brunswick, fourteen for the Province of Manitoba, twenty- for the Province of British Columbia, four for the Province of Prince Edward Island, seven for the Province of Saskatchewan, seventeen for the Province of Alberta, seven for the Prov of Newfoundland, one for the Yukon Territory and one for Mackenzie district of the North Territories, thus making a total of two hundred and sixty-five members.

1965 Redistribution of Representation in the House of Commons.—' Representation Commissioner Act setting up the office and duties of the Representa Commissioner was given Royal Assent on Dec. 21, 1963. The Electoral Bounda Readjustment Act providing for the establishment of Electoral Boundaries Commiss to report upon and to provide for the readjustment of the representation of the provi in the House of Commons in accordance with the findings of the 1961 Census of Popula was given Royal Assent on Nov. 20, 1964.

Pursuant to Sect. 11 of the Electoral Boundaries Readjustment Act, the Domi Statistician sent to the Representation Commissioner a certified return showing the po lation of Canada and of each of the provinces and the population of Canada by elect districts as ascertained by the 1961 Census. The Representation Commissioner calcul the number of members of the House of Commons to be assigned to each of the provi subject and according to the provisions of Sect. 51 of the British North America Act, 1 and the rules provided therein. He then caused a statement to be published in the *Ca Gazette* of Nov. 28, 1964, setting forth the following results:—

> Eighty-eight members of the House of Commons shall be elected for the Provinc Ontario, seventy-four for the Province of Quebec, eleven for the Province of Nova Sc ten for the Province of New Brunswick, thirteen for the Province of Manitoba, twenty-t for the Province of British Columbia, four for the Province of Prince Edward Island, thir for the Province of Saskatchewan, nineteen for the Province of Alberta and seven for the P ince of Newfoundland.

The Governor General, by proclamation published in the *Canada Gazette*, establis an Electoral Boundaries Commission for each province. It was the task of each C mission to prepare, with all reasonable dispatch, a report setting forth its recommendat concerning the division of its particular province into electoral districts and the rec mendations concerning the description of the boundaries of each such district and representation and name to be given thereto. A copy of the 1961 Census return was to the chairman of each Commission immediately after its members were appointed.

Pursuant to Sect. 8 of the Representation Commissioner Act, maps were prep in the office of the Representation Commissioner showing the distribution of popula in each province and setting out alternative proposals respecting the boundaries of elect districts in each province; these maps were then supplied to the respective Commissi The Commissions complied with the procedure of the Electoral Boundaries Act and c pleted their reports within the time prescribed, which was one year. Two certified co of each report were received by the Representation Commissioner; as required by S 19(1) of that Act, one of these copies was transmitted to the Speaker of the House of C mons, who in turn laid it before the House of Commons.

Then followed a period of thirty days in which objections in writing, signed by fewer than ten members of the House of Commons, were filed with the Speaker specif the provisions of the report objected to and the reasons for the objection. A fur period of 15 days was set aside in which the House of Commons was to consider the ma

he objections; this period was increased to 45 sitting days by an Act, assented to on . 23, 1966, entitled "An Act to extend the time for consideration of objections pursuant Sect. 20 of the Electoral Boundaries Readjustment Act with respect to the reports of missions established for the decennial census taken in the year 1961".

Several objections were filed with the Speaker, the motions were taken up and con-ered and the reports referred back to the Representation Commissioner by the Speaker then to the Commissions. On the expiration of a thirty-day period for that purpose, Commissions returned their reports with or without amendment, through the Represen-on Commissioner to the Speaker. Then a draft representation order was prepared by Representation Commissioner to be transmitted to the Secretary of State. This er specified the number of members of the House of Commons who shall be elected for h of the provinces as calculated by the Representation Commissioner and, dividing h of the provinces into electoral districts, described the boundaries of each such district l specified the representation and name given thereto, in accordance with the recom-ndations contained in the reports. The Governor in Council, by proclamation of June 1966, declared the draft representation order to be in force, effective upon the dissolu-n of the then-existing Parliament.

At the subsequent election, according to the representation order set out in the Schedule he Proclamation, 88 members of the House of Commons shall be elected for the Province Ontario, 74 for the Province of Quebec, 11 for the Province of Nova Scotia, 10 for the vince of New Brunswick, 13 for the Province of Manitoba, 23 for the Province of British umbia, four for the Province of Prince Edward Island, 13 for the Province of Saskat-wan, 19 for the Province of Alberta and seven for the Province of Newfoundland. In lition, one member each will be elected for the Yukon Territory and the Northwest rritories, making a total representation of 264 in the House of Commons.

The number of representatives of each province elected at each of the 28 General ections since Confederation is given in Table **9**.

.—Representation in the House of Commons, as at Federal General Elections 1867-1968

Province or Territory	1867	1872	1874 1878	1882	1887 1891	1896 1900	1904	1908 1911	1917 1921	1925 1926 1930	1935 1940 1945	1949	1953 1957 1958 1962 1963 1965	1968
ario	82	88	88	92	92	92	86	86	82	82	82	83	85	88
bec	65	65	65	65	65	65	65	65	65	65	65	73	75	74
va Scotia	19	21	21	21	21	20	18	18	16	14	12	13	12	11
w Brunswick	15	16	16	16	16	14	13	13	11	11	10	10	10	10
nitoba	...	4	4	5	5	7	10	10	15	17	17	16	14	13
tish Columbia	...	6	6	6	6	6	7	7	13	14	16	18	22	23
nce Edward Island	...	...	6	6	6	5	4	4	4	4	4	4	4	4
katchewan	...	...	...	...	4	4	10	10	16	21	21	20	17	13
erta								7	12	16	17	17	17	19
kon Territory	...	...	...	...	...	...	1	1	1	1	1	1	1	1
ckenzie River, N.W.T.[1]													1	1
wfoundland	...	...	...	...	...	...	...	...	...	...	...	7	7	7
Totals	**181**	**200**	**206**	**211**	**215**	**213**	**214**	**221**	**235**	**245**	**245**	**262**	**265**	**264**

[1] Electoral District of Northwest Territories in 1963, 1965 and 1968.

10.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-eighth General Election, June 25, 1968 and Revised to May 1, 1970

Speaker	Hon. Lucien Lamoureux
Prime Minister	Rt. Hon. Pierre Elliott Trudeau
Leader of the Opposition	Hon. Robert L. Stanfield
Clerk of the House of Commons	Alistair Fraser

Note.—The vote is summarized by provinces in Table 11, p. 97. The leaders of the political parties are indicated by asterisks (*). For Parliamentary Secretaries, see p. 82. This information, except the population constituencies, has been supplied by the Chief Electoral Officer. Party affiliations are unofficial. Lib.=Liberal; P.C.=Progressive Conservative; N.D.P.=New Democratic Party; R.cr.=Ralliement créditiste; Ind.=Independent. Party standing at General Election of June 25, 1968: 155 Liberal, 72 Progressive Conservative, 22 New Democratic Party, 14 Ralliement créditiste, and 1 Independent.

Province and Electoral District	Population, Census 1966	Voters on List	Total Votes Polled (incl. rejections)	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
Newfoundland— (7 members)							
Bonavista–Trinity–Conception	67,876	35,823	25,624	14,823	F. Moores	Harbour Grace	P.C.
Burin–Burgeo	54,219	24,626	14,993	8,674	Hon. D. Jamieson	Swift Current	Lib.
Gander–Twillingate	71,620	32,842	20,085	10,601	J. H. Lundrigan	Gander	P.C.
Grand Falls–White Bay–Labrador	66,973	32,697	20,694	10,322	A. H. Peddle	Windsor	P.C.
Humber–St. George's–St. Barbe	77,380	33,220	22,665	9,765	J. Marshall	Corner Brook	P.C.
St. John's East	83,321	41,164	30,116	18,153	J. A. McGrath	St. John's	P.C.
St. John's West	72,007	37,222	27,393	15,379	W. C. Carter	St. John's	P.C.
Prince Edward Island— (4 members)							
Cardigan	22,978	12,840	11,610	5,717	M. J. McQuaid	Souris	P.C.
Egmont	31,034	15,212	13,534	7,182	D. MacDonald	Alberton	P.C.
Hillsborough	32,192	18,627	15,897	8,328	H. N. Macquarrie	Victoria	P.C.
Malpeque	22,331	11,537	10,184	5,049	Hon. J. A. MacLean	Belle Creek	P.C.
Nova Scotia— (11 members)							
Annapolis Valley	71,200	37,720	30,963	17,435	J. P. Nowlan	Wolfville	P.C.
Cape Breton–East Richmond	65,292	32,771	27,867	11,583	D. MacInnis	Glace Bay	P.C.
Cape Breton Highlands–Canso	57,092	31,675	27,578	13,725	Hon. A. J. MacEachen	Inverness	Lib.
Cape Breton–The Sydneys	67,526	34,882	29,206	14,971	R. Muir	Sydney Mines	P.C.
Central Nova	60,639	35,085	28,743	16,720	R. MacEwan	New Glasgow	P.C.
Cumberland–Colchester North	65,181	37,511	30,498	18,446	R. C. Coates	Amherst	P.C.
Dartmouth–Halifax East	90,286	45,022	35,961	19,694	M. Forrestall	Waverley	P.C.
Halifax	70,822	40,727	32,727	19,569	Hon. R. L. Stanfield*	Halifax	P.C.
Halifax–East Hants	85,070	46,513	37,759	22,323	R. McCleave	Halifax	P.C.
South Shore	62,692	37,677	30,234	17,547	L. R. Crouse	Lunenburg	P.C.
South Western Nova	60,239	33,208	28,064	14,543	L.-R. Comeau	Saulnierville	P.C.
New Brunswick— (10 members)							
Carleton–Charlotte	56,893	32,107	24,928	15,469	Hon. H. J. Flemming	Upper Woodstock	P.C.
Fundy–Royal	63,465	35,592	27,998	17,013	G. Fairweather	East Riverside	P.C.
Gloucester	59,903	28,458	22,457	12,196	H. Breau	Tracadie	Lib.
Madawaska–Victoria	57,000	26,615	20,151	9,924	E. Corbin	Edmundston	Lib.
Moncton	74,110	41,742	36,145	17,969	C. H. Thomas	Moncton	P.C.
Northumberland–Miramichi	54,527	24,998	19,700	10,292	G. A. P. Smith	Newcastle	Lib.
Restigouche	51,519	24,113	19,748	9,991	Hon. J.-E. Dubé	Campbellton	Lib.
Saint John–Lancaster	72,597	40,273	30,073	15,756	T. M. Bell	Saint John	P.C.
Westmorland–Kent	51,593	26,044	21,916	11,519	G. Crossman	Buctouche	Lib.
York–Sunbury	75,181	37,970	31,600	17,394	J. C. MacRae	Silverwood	P.C.

—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-eighth General Election, June 25, 1968 and Revised to May 1, 1970—continued

Province and Electoral District	Population, Census 1966	Voters on List	Total Votes Polled (incl. rejections)	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
uebec—							
(74 members)							
Abitibi	58,598	27,335	20,025	10,884	G. Laprise	LaSarre	R.cr.
Argenteuil	72,926	41,059	32,694	15,726	R.-B. Major	Saint-Sauveur-des-Monts	Lib.
Beauce	70,727	36,352	28,593	13,428	R. Rodrigue	Ville-Saint-Georges-Ouest	R.cr.
Beauharnois	73,207	40,519	29,307	17,203	G. Laniel	Salaberry-de-Valleyfield	Lib.
Bellechasse	66,376	34,985	24,070	11,137	A. Lambert	Joly	R.cr.
Berthier	62,233	34,608	23,378	10,818	A. Yanakis	Saint-Gabriel-de-Brandon	Lib.
Bonaventure	56,837	27,653	19,300	10,144	A. Béchard	Carleton	Lib.
Chambly	98,822	52,146	35,379	22,767	B. Pilon	Beloeil	Lib.
Champlain	65,448	35,392	26,891	9,866	L. Matte	Saint-Casimir	R.cr.
Charlevoix	63,969	34,015	23,112	9,487	Hon. M. Asselin	La Malbaie	P.C.
Chicoutimi	79,745	38,116	28,330	14,054	P. Langlois	Chicoutimi	Lib.
Compton	65,074	33,004	25,652	11,961	H. Latulippe	Lac-Mégantic	R.cr.
Drummond	74,966	38,208	30,601	11,667	Hon. J.-L. Pepin	Drummondville	Lib.
Frontenac	67,762	33,651	27,283	12,298	B. Dumont[1]	Plessisville	R.cr.
Gaspé	55,359	26,804	20,545	9,208	A. Cyr	Chandler	Lib.
Gatineau	70,618	36,147	27,112	14,348	G. Clermont	Thurso	Lib.
Hull	86,111	45,700	33,796	22,982	G. Isabelle	Lucerne	Lib.
Joliette	76,723	42,074	29,395	12,464	R. Lasalle	Crabtree	P.C.
Kamouraska	65,582	33,335	22,046	8,762	C.-E. Dionne	Saint-Pascal	R.cr.
Labelle	77,041	41,781	30,621	15,801	Hon. L. Cadieux	Saint-Antoine-des-Laurentides	Lib.
Lac-Saint-Jean	58,079	26,413	20,373	9,325	M. Lessard	Alma	Lib.
Langelier	67,615	41,484	30,058	11,439	Hon. J. Marchand	Quebec	Lib.
Lapointe	73,436	34,613	25,549	11,821	G. Marceau	Jonquière	Lib.
Laprairie	105,660	59,731	42,884	31,968	I. Watson	Laprairie	Lib.
Lévis	75,911	41,579	33,308	12,227	R. Guay	Lauzon	Lib.
Longueuil	91,553	48,866	32,316	19,080	Hon. J.-P. Côté	Longueuil	Lib.
Lotbinière	70,465	36,692	30,397	11,302	A. Fortin	Victoriaville	R.cr.
Louis-Hébert	95,493	58,369	44,994	28,220	J.-C. Cantin	Cap-Rouge	Lib.
Manicouagan	74,183	37,195	22,803	13,504	G. Blouin	Sept Îles	Lib.
Matane	52,465	24,878	17,360	9,207	P. De Bané	Quebec	Lib.
Missisquoi	74,247	40,555	31,095	12,905	Y. Forest	Magog	Lib.
Montmorency	97,541	53,644	42,152	17,327	O. Laflamme	Sainte-Foy	Lib.
Pontiac	59,755	30,896	21,186	10,250	T. Lefebvre	Davidson	Lib.
Portneuf	93,758	49,793	38,629	18,328	R. Godin	Les Écureuils	R.cr.
Québec-Est	83,862	46,442	34,988	14,945	G. Duquet	Quebec	Lib.
Richelieu	75,716	43,031	32,152	15,350	F. Côté	Sainte-Brigitte-des-Saults	Lib.
Richmond	64,150	31,302	25,128	11,853	L. Beaudoin	Bromptonville	R.cr.
Rimouski	70,978	35,146	24,807	12,073	G. LeBlanc	Rimouski	Lib.
Roberval	56,422	26,005	18,993	8,811	C.-A. Gauthier	Mistassini	R.cr.
Saint-Hyacinthe	78,230	44,804	35,245	16,389	Hon. J.-H.-T. Ricard	Saint-Hyacinthe	P.C.
Saint-Jean	77,700	41,820	31,129	15,878	W. Smith	Hemmingford	Lib.
Saint-Maurice	75,068	39,212	31,700	13,895	Hon. J. Chrétien	Shawinigan	Lib.
Shefford	75,664	39,618	31,524	12,633	G. Rondeau	Granby	R.cr.
Sherbrooke	89,693	51,070	38,575	15,270	P.-M. Gervais	Sherbrooke	Lib.
Témiscamingue	59,723	27,866	21,665	12,532	R. Caouette*	Rouyn	R.cr.
Témiscouata	64,117	31,171	22,963	10,605	R. Gendron	Rivière-du-Loup	Lib.
Terrebonne	92,821	51,625	35,106	21,191	J.-R. Comtois	Repentigny	Lib.
Trois-Rivières	93,318	52,274	39,066	17,592	J.-A. Mongrain	Trois-Rivières	Lib.
Vaudreuil	97,742	51,584	40,959	29,830	R. Émard	Île-Perrot	Lib.
Villeneuve	61,022	29,880	21,462	10,073	O. Tétrault	Val-d'Or	R.cr.
land of Montreal and Île Jésus—							
Ahuntsic	91,047	50,690	36,952	23,149	J.-L. Rochon	Montreal	Lib.
Bourassa	103,078	54,791	36,927	19,778	J.-L. Trudel	Montreal North	Lib.
Dollard	105,435	59,219	48,178	34,146	J.-P. Goyer	Saint-Laurent	Lib.
Duvernay	98,075	50,442	37,636	18,701	Hon. E. W. Kierans	Hampstead	Lib.
Gamelin	92,611	50,846	35,619	19,051	A. Portelance	Montreal	Lib.
Hochelaga	72,880	40,424	22,641	12,080	Hon. G. Pelletier	Westmount	Lib.

[1] Resigned Apr. 6, 1970; see Appendix for by-election.

10.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-eighth General Election, June 25, 1968 and Revised to May 1, 1970—continued

Province and Electoral District	Population, Census 1966	Voters on List	Total Votes Polled (incl. rejections)	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
Quebec—concluded							
Island of Montreal and Île Jésus—concluded							
Lachine	90,851	51,419	40,647	25,989	R. Rock	Lachine	Lib.
Lafontaine	75,018	43,868	26,258	14,786	G.-C. Lachance	Montreal	Lib.
LaSalle	94,885	57,115	39,633	26,546	H.-P. Lessard	Montreal	Lib.
Laurier	75,034	34,575	19,881	10,040	J.-E. Leblanc	Montreal	Lib.
Laval	98,013	55,226	39,361	24,740	M. Roy	Ville-de-Laval	Lib.
Maisonneuve	79,721	46,010	28,078	15,784	J.-A. Thomas	Montreal	Lib.
Mercier	104,113	55,787	37,861	19,077	P. Boulanger	Pointe-aux-Trembles	Lib.
Mount Royal	87,529	51,896	41,810	37,402	Rt. Hon. P. E. Trudeau*	Montreal	Lib.
Notre-Dame-de-Grâce	80,199	44,693	36,008	25,959	W. Allmand	Montreal	Lib.
Outremont	82,020	44,046	31,964	24,219	A. Noël	Outremont	Lib.
Papineau	76,592	40,139	23,744	14,379	A. Ouellet	Montreal	Lib.
Saint-Denis	79,193	36,741	24,453	17,022	M. Prud'homme	Montreal	Lib.
Saint-Henri	72,867	36,143	20,866	12,792	G. Loiselle	Montreal	Lib.
Saint-Jacques	64,562	30,344	16,896	9,701	J. Guilbault	Montreal	Lib.
Sainte-Marie	67,761	38,863	22,053	9,528	J.-G. Valade	Montreal	P.C.
Saint-Michel	116,330	55,560	34,878	22,307	V. Forget	Saint-Michel	Lib.
Verdun	76,832	44,542	30,322	22,436	Hon. B. Mackasey	Verdun	Lib.
Westmount	81,688	51,439	39,983	31,104	Hon. C. M. Drury	Westmount	Lib.
Ontario— (88 members)							
Algoma	48,081	26,213	18,977	9,542	M. Foster	Desbarats	Lib.
Brant	91,706	51,935	40,489	16,029	J. E. Brown	Brantford	Lib.
Bruce	57,604	33,722	27,521	12,775	R. Whicher	Wiarton	Lib.
Cochrane	55,750	26,877	20,357	9,803	R. W. Stewart	Cochrane	Lib.
Elgin	61,912	35,485	29,073	12,856	H. E. Stafford	St. Thomas	Lib.
Essex	78,352	40,991	29,840	14,707	E. Whelan	Amherstburg	Lib.
Fort William	56,465	31,212	25,501	10,635	H. Badanai	Fort William	Lib.
Frontenac-Lennox and Addington	57,066	31,556	25,283	11,801	D. Alkenbrack	Napanee	P.C.
Glengarry-Prescott	60,214	32,044	24,377	14,970	V. Ethier	Glen Robertson	Lib.
Grenville-Carleton	91,635	54,006	44,334	21,250	G. Blair	Ottawa	Lib.
Grey-Simcoe	61,409	37,008	28,222	13,146	P. V. Noble	Shallow Lake	P.C.
Halton	87,817	47,589	37,320	17,837	R. L. Whiting	Oakville	Lib.
Halton-Wentworth	99,185	58,543	47,648	19,563	J. Morison	Dundas	Lib.
Hamilton East	78,925	41,788	30,790	15,273	Hon. J. C. Munro	Hamilton	Lib.
Hamilton Mountain	99,059	54,553	43,540	17,794	G. Sullivan	Hamilton	Lib.
Hamilton-Wentworth	87,431	48,686	38,251	14,979	C. D. Gibson	Ancaster	Lib.
Hamilton West	81,787	45,941	33,959	13,580	L. M. Alexander	Hamilton	P.C.
Hastings	60,643	33,934	27,846	13,555	L. Grills	Belleville	P.C.
Huron	59,605	32,086	26,995	14,652	R. E. McKinley	Zurich	P.C.
Kenora-Rainy River	54,810	28,341	20,725	10,144	J. M. Reid	Kenora	L.-Lab.
Kent-Essex	78,644	43,674	31,125	15,195	H. W. Danforth	Blenheim	P.C.
Kingston and the Islands	79,857	42,602	32,951	16,234	Hon. E. J. Benson	Kingston	Lib.
Kitchener	93,228	52,828	40,799	16,471	K. Hymmen	Kitchener	Lib.
Lambton-Kent	66,421	37,599	28,151	14,460	M. T. McCutcheon	Florence	P.C.
Lanark and Renfrew	57,967	34,140	27,948	13,156	M. McBride	Arnprior	Lib.
Leeds	65,412	36,457	29,304	13,536	D. M. Code	Smiths Falls	P.C.
Lincoln	79,123	42,792	33,111	13,328	H. G. Barrett	Thorold	Lib.
London East	82,682	44,737	31,983	11,823	C. Turner	London	Lib.
London West	92,588	57,166	44,391	21,764	J. Buchanan	London	Lib.
Middlesex	79,918	45,483	35,275	15,986	J. Lind	London	Lib.
Niagara Falls	83,873	46,473	34,151	17,183	Hon. J. Greene	Niagara Falls	Lib.
Nickel Belt	68,504	32,379	25,821	11,551	G.-J. Serré	Chelmsford	Lib.
Nipissing	62,262	31,822	25,364	13,524	C. Legault	Sturgeon Falls	Lib.
Norfolk-Haldimand	69,179	39,164	31,754	14,908	W. Knowles	Langton	P.C.
Northumberland-Durham	69,413	38,254	30,993	13,707	R. C. Honey	Port Hope	Lib.
Ontario	72,560	40,496	31,924	13,483	N. A. Cafik	Pickering	Lib.
Oshawa-Whitby	98,458	55,687	45,757	15,224	J. E. Broadbent	Oshawa	N.D.P.
Ottawa-Carleton	98,291	52,504	44,014	28,987	Hon. J. N. Turner	Ottawa	Lib.
Ottawa Centre	73,339	45,370	34,306	19,578	Hon. G. McIlraith	Ottawa	Lib.

—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-eighth General Election, June 25, 1968 and Revised to May 1, 1970—continued

Province and Electoral District	Population, Census 1966	Voters on List	Total Votes Polled (incl. rejections)	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
tario—concluded							
ttawa East	79,513	44,507	33,632	26,170	J.-T. Richard	Ottawa	Lib.
ttawa West	94,365	53,724	45,364	23,750	L. Francis	Ottawa	Lib.
xford	76,008	42,324	34,788	18,504	W. Nesbitt	Woodstock	P.C.
arry Sound-Muskoka	56,026	32,882	25,425	12,045	G. Aiken	Gravenhurst	P.C.
eel-Dufferin-Simcoe	94,857	50,586	40,372	18,950	B. S. Beer	Brampton	Lib.
eel South	107,851	65,976	52,124	24,255	H. Chappell	Cooksville	Lib.
erth	69,259	39,451	31,062	14,959	Hon. J. W. Monteith	Stratford	P.C.
eterborough	79,491	46,029	37,461	15,675	H. Faulkner	Lakefield	Lib.
ort Arthur	57,028	29,984	22,952	11,079	Hon. R. K. Andras	Port Arthur	Lib.
rince Edward-Hastings	72,355	37,939	31,175	15,682	Hon. G. Hees	Cobourg	P.C.
enfrew North	59,429	28,287	23,154	13,195	L. D. Hopkins	Petawawa	Lib.
arnia	78,931	43,738	32,432	14,573	J. Cullen	Sarnia	Lib.
ault Ste Marie	75,181	37,763	31,674	12,527	C. T. Murphy	Sault Ste. Marie	Lib.
t. Catharines	91,990	53,455	40,149	18,100	J. C. McNulty	St. Catharines	Lib.
imcoe North	81,949	46,476	36,593	16,619	P. B. Rynard	Orillia	P.C.
tormont-Dundas	69,961	38,662	22,632	17,014	Hon. L. Lamoureux	Cornwall	Ind.
udbury	88,393	47,855	37,791	19,672	J. Jerome	Sudbury	Lib.
hunder Bay	56,405	27,333	20,765	9,540	B. K. Penner	Dryden	Lib.
imiskaming	50,845	27,105	21,043	8,482	A. Peters	New Liskeard	N.D.P.
immins	55,064	27,835	22,244	11,141	J.-R. Roy	Timmins	Lib.
ictoria-Haliburton	54,359	33,580	26,723	12,621	W. C. Scott	Kinmount	P.C.
aterloo	99,047	57,094	45,126	15,231	M. Saltsman	Galt	N.D.P.
elland	80,599	44,526	35,162	17,335	D. R. Tolmie	Welland	Lib.
ellington	65,376	37,470	30,569	13,496	A. D. Hales	Guelph	P.C.
ellington-Grey	67,269	38,310	27,491	12,118	M. Howe	Arthur	P.C.
indsor-Walkerville	86,108	48,296	35,214	17,090	M. MacGuigan	Windsor	Lib.
indsor West	86,164	46,970	30,765	16,442	H. Gray	Windsor	Lib.
ork North	100,480	59,010	47,094	24,054	B. Danson	Willowdale	Lib.
ork-Simcoe	81,755	45,782	35,395	15,906	J. Roberts	Newmarket	Lib.
ropolitan Toronto—							
roadview	74,761	36,874	25,631	10,406	J. Gilbert	Toronto	N.D.P.
avenport	80,824	29,106	21,598	10,736	C. L. Caccia	Toronto	Lib.
on Valley	93,338	65,849	53,827	27,335	R. P. Kaplan	Downsview	Lib.
glinton	81,137	51,315	39,606	23,215	Hon. M. Sharp	Toronto	Lib.
tobicoke	125,866	71,562	57,569	32,066	A. Gillespie	Toronto	Lib.
reenwood	81,350	43,992	32,461	12,117	A. Brewin	Toronto	N.D.P.
igh Park	83,817	50,350	38,645	16,260	W. Deakon	Islington	Lib.
akeshore	82,391	45,939	33,942	14,464	K. Robinson	Toronto	Lib.
arkdale	81,268	41,650	29,165	14,717	S. Haidasz	Toronto	Lib.
osedale	77,943	47,013	33,577	19,011	Hon. D. S. Macdonald	Toronto	Lib.
t. Paul's	71,703	48,074	35,925	20,981	I. Wahn	Toronto	Lib.
carborough East	113,603	64,115	49,740	23,701	M. P. O'Connell	Toronto	Lib.
carborough West	85,977	46,566	35,021	14,889	D. Weatherhead	Willowdale	Lib.
adina	77,720	26,638	17,109	9,379	P. Ryan	Toronto	Lib.
inity	82,111	32,676	23,022	13,126	Hon. P. Hellyer	Toronto	Lib.
ork Centre	120,013	62,822	47,862	26,758	J. E. Walker	Toronto	Lib.
ork East	90,488	58,062	43,740	19,320	S. Otto	Toronto	Lib.
ork-Scarborough	139,535	79,786	63,994	37,374	R. Stanbury	Ottawa	Lib.
ork South	85,146	39,036	28,833	12,357	D. Lewis	Toronto	N.D.P.
ork West	114,646	59,553	45,937	20,416	P. G. Givens	Toronto	Lib.
nitoba— (13 members)							
randon-Souris	63,750	36,380	29,204	15,060	Hon. W. Dinsdale	Brandon	P.C.
hurchill	63,826	34,839	21,798	9,009	R. Simpson	Flin Flon	P.C.
auphin	58,986	31,487	23,559	8,701	G. Ritchie	Dauphin	P.C.
isgar	60,737	32,656	22,965	11,785	G. Muir	Roland	P.C.
arquette	61,990	31,875	26,303	12,706	C. Stewart	Minnedosa	P.C.
ortage	53,391	26,107	19,762	8,415	G. R. Cobbe	Portage la Prairie	Lib.
rovencher	63,075	31,487	21,817	9,021	M. G. Smerchanski	Winnipeg	Lib.
t. Boniface	94,132	53,071	42,839	22,032	J.-P. Guay	St. Boniface	Lib.
elkirk	91,024	49,612	39,104	17,310	E. Schreyer[1]	Winnipeg	N.D.P.
innipeg North	84,035	47,839	34,687	15,608	D. Orlikow	Winnipeg	N.D.P.

[1] Resigned June 9, 1969; D. Rowland (N.D.P.) elected in by-election Apr. 13, 1970.

10.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-eighth General Election, June 25, 1968 and Revised to May 1, 1970—continued

Province and Electoral District	Population, Census 1966	Voters on List	Total Votes Polled (incl. rejections)	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
Manitoba—concluded							
Winnipeg North Centre.	79,039	45,390	30,671	14,880	S. H. KNOWLES	Winnipeg	N.D.
Winnipeg South	90,329	53,726	44,393	23,457	Hon. J. RICHARDSON	Winnipeg	Lib.
Winnipeg South Centre.	98,752	57,094	46,170	23,775	E. B. OSLER	Winnipeg	Lib.
Saskatchewan— (13 members)							
Assiniboia	62,869	32,994	28,645	9,636	A. B. DOUGLAS	Weyburn	Lib.
Battleford–Kindersley	69,765	35,236	28,544	10,583	R. THOMSON	Duperow	N.D.
Mackenzie	52,613	26,912	20,420	8,578	S. J. KORCHINSKI	Rama	P.C.
Meadow Lake	52,556	25,700	19,544	7,688	A. C. CADIEU	Spiritwood	P.C.
Moose Jaw	69,532	36,022	29,672	11,982	J. L. SKOBERG	Moose Jaw	N.D.
Prince Albert	73,062	40,127	32,014	17,850	Rt. Hon. J. G. DIEFENBAKER	Prince Albert	P.C.
Qu'Appelle–Moose Mountain	67,671	36,411	29,660	12,429	R. R. SOUTHAM	Gainsborough	P.C.
Regina East	90,047	49,358	39,527	13,641	J. BURTON	Regina	N.D.
Regina–Lake Centre	92,459	52,940	44,008	17,102	L. BENJAMIN	Regina	N.D.
Saskatoon–Biggar	86,538	49,682	37,511	15,928	A. P. GLEAVE	Saskatoon	N.D.
Saskatoon–Humboldt	97,034	54,246	44,490	15,210	Hon. O. E. LANG	Saskatoon	Lib.
Swift Current–Maple Creek	65,774	35,233	28,572	11,237	J. McINTOSH	Swift Current	P.C.
Yorkton–Melville	75,424	42,737	34,186	13,212	L. NYSTROM	Yorkton	N.D.
Alberta— (19 members)							
Athabasca	61,969	27,755	18,990	8,852	P. YEWCHUK	Lac-la-Biche	P.C.
Battle River	62,602	32,372	24,577	15,725	C. DOWNEY	Castor	P.C.
Calgary Centre	80,057	50,808	36,305	16,977	Hon. D. S. HARKNESS	Calgary	P.C.
Calgary North	108,224	58,006	43,733	21,708	E. M. WOOLLIAMS	Calgary	P.C.
Calgary South	104,752	56,934	43,233	20,472	P. MAHONEY	Calgary	Lib.
Crowfoot	56,403	29,497	22,582	16,508	J. H. HORNER	Pollockville	P.C.
Edmonton Centre	88,896	51,388	35,207	12,062	S. E. PAPROSKI	Edmonton	P.C.
Edmonton East	97,501	50,681	34,521	15,764	W. SKOREYKO	Edmonton	P.C.
Edmonton–Strathcona	92,651	54,336	40,474	21,074	H. HARRIES	Edmonton	Lib.
Edmonton West	101,480	51,907	39,923	19,612	Hon. M. LAMBERT	Edmonton	P.C.
Lethbridge	70,395	36,224	26,645	11,901	D. R. GUNDLOCK	Lethbridge	P.C.
Medicine Hat	63,442	32,327	24,589	9,015	Hon. H. A. OLSON	Medicine Hat	Lib.
Palliser	70,494	36,943	28,279	16,967	S. SCHUMACHER	Drumheller	P.C.
Peace River	60,832	30,521	21,420	11,825	G. BALDWIN	Peace River	P.C.
Pembina	81,306	41,167	30,022	17,578	J. BIGG	Westlock	P.C.
Red Deer	75,993	38,198	28,988	17,930	R. N. THOMPSON	Red Deer	P.C.
Rocky Mountain	55,553	28,360	19,654	7,355	A. B. SULATYCKY	Whitecourt	Lib.
Vegreville	63,842	33,142	24,673	15,855	D. MAZANKOWSKI	Vegreville	P.C.
Wetaskiwin	66,811	33,999	23,601	15,178	H. A. MOORE	Wetaskiwin	P.C.
British Columbia— (23 members)							
Burnaby–Richmond	86,449	48,947	38,350	16,182	T. GOODE	Delta	Lib.
Burnaby–Seymour	87,043	50,269	39,766	17,891	R. PERRAULT	North Vancouver	Lib.
Capilano	92,326	54,260	42,782	28,292	Hon. J. DAVIS	West Vancouver	Lib.
Coast Chilcotin	61,248	31,494	21,943	10,292	P. St-PIERRE	Big Creek	Lib.
Comox–Alberni	77,614	41,274	30,573	11,939	R. J. J. DURANTE[1]	Port Alberni	Lib.
Esquimalt–Saanich	90,889	52,587	42,000	16,501	D. ANDERSON	Victoria	Lib.
Fraser Valley East	70,566	37,838	28,107	9,689	J. PRINGLE	Chilliwack	Lib.
Fraser Valley West	85,053	47,812	36,593	14,410	M. ROSE	Coquitlam	N.D.
Kamloops–Cariboo	82,532	41,888	32,303	13,000	L. S. MARCHAND	Kamloops	Lib.
Kootenay West	69,284	36,210	27,287	12,181	R. HARDING	Silverton	N.D.
Nanaimo–Cowichan–The Islands	81,031	47,424	36,891	15,273	C. CAMERON[2]	Lantzville	N.D.
New Westminster	88,445	52,204	40,849	18,083	D. A. HOGARTH	Coquitlam	Lib.
Okanagan Boundary	77,937	47,555	37,973	12,321	B. HOWARD	Penticton	Lib.
Okanagan–Kootenay	74,378	39,897	31,071	11,370	D. STEWART	Kimberley	Lib.

[1] Election of R. J. J. Durante declared void Feb. 14, 1969; T. S. Barnett (N.D.P.) elected in by-election Apr. 1969. [2] Died July 28, 1968; T. C. Douglas (N.D.P.) elected in by-election Feb. 10, 1969.

—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-eighth General Election, June 25, 1968 and Revised to May 1, 1970—concluded

Province and Electoral District	Population, Census 1966	Voters on List	Total Votes Polled (incl. rejections)	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
itish Columbia— concluded							
Prince George–Peace River	92,778	44,925	31,506	10,926	R. Borrie	Prince George	Lib.
Skeena	73,682	33,940	24,117	12,471	F. Howard	Terrace	N.D.P.
Surrey	85,614	49,172	36,526	16,186	B. Mather	North Surrey	N.D.P.
Vancouver Centre	86,307	64,498	45,671	25,426	Hon. R. Basford	Vancouver	Lib.
Vancouver East	79,394	41,219	27,014	13,339	H. E. Winch	Vancouver	N.D.P.
Vancouver Kingsway	81,226	43,818	31,749	15,599	Grace MacInnis	Vancouver	N.D.P.
Vancouver Quadra	80,140	47,381	38,484	20,788	G. Deachman	Vancouver	Lib.
Vancouver South	86,612	52,044	40,324	19,757	Hon. A. Laing	Vancouver	Lib.
Victoria	83,126	53,303	42,229	18,401	D. Groos	Victoria	Lib.
ukon Territory— (1 member)							
Yukon	14,382	7,559	6,563	3,110	E. Nielsen	Whitehorse	P.C.
rthwest Territories— (1 member)							
Northwest Territories	28,738	13,807	9,563	6,018	R. J. Orange	Yellowknife	Lib.

Salaries, Allowances and Pensions of Senators and Members of the House Commons.—Members of the Senate and House of Commons receive a sessional allowce at the rate of $12,000 per annum. In addition, for each session of Parliament, they ay be paid travelling expenses between their place of residence or constituency and ttawa as may be required for the performance of their duties as members of the Senate House of Commons. Senators receive an annual expense allowance of $3,000 and embers of the House of Commons receive an expense allowance of $6,000, neither of hich is subject to income tax, and is payable quarterly. The member of the Senate cupying the recognized position as Leader of the Government in the Senate is paid, addition to his sessional allowance, an annual allowance of $10,000 and to the member the Senate occupying the recognized position as Opposition Leader in the Senate there paid, in addition to his sessional allowance, an annual allowance of $6,000; but if the eader of the Government is in receipt of a salary under the Salaries Act the annual allowce is not paid. The remuneration of the Prime Minister is $25,000 a year and of a abinet Minister and the Leader of the Opposition in the House of Commons $15,000 a ear in addition to the sessional and expense allowances each receives as a member of arliament. The remuneration of a Minister without Portfolio is $7,500 a year in addition the sessional and expense allowances, the latter being not taxable. Additional annual lowances of $4,000 (beyond the above-noted sessional allowance) are provided to each eader of a Party having a recognized membership of twelve or more persons in the House Commons other than the Prime Minister and the member occupying the recognized osition as Leader of the Opposition in the House of Commons and, likewise, to the Chief overnment Whip and to the Chief Opposition Whip in the House of Commons. The peaker of the Senate and the Speaker of the House of Commons each receives, besides e sessional allowance and expense allowance, a salary of $9,000 per annum. The Deputy peaker of the House of Commons receives a salary of $6,000 per annum. The Speakers the Senate and of the House of Commons are also entitled to $3,000 in lieu of residence nd the Deputy Speaker of the House of Commons an allowance of $1,500 in lieu of resience; these allowances are not taxable. The Deputy Chairman of Committees receives n annual allowance of $4,000. Parliamentary Secretaries to the Ministers of the Crown

receive an annual allowance of $4,000 a year, in addition to their sessional and expen allowances. A motor vehicle allowance of $2,000 is paid to each Minister of the Crow and to the recognized Leader of the Opposition in the House of Commons, and a mot vehicle allowance of $1,000 is paid to the Speakers of the Senate and of the House of Con mons; these allowances are not taxable.

A member of Parliament contributes, by reservation, 7½ p.c. of his sessional indemnit toward his retirement allowance, which is based on the average of the sessional indemnit received over the best consecutive six years of his pensionable service accumulated follows: (1) 3½ p.c. of this six-year average for each of the first 10 years of pensionab service; (2) 3 p.c. of this average for each of the next 10 years; (3) 2 p.c. of this average f each of the next five years; and (4) 2 p.c. of this average for each of the years of pensionab service earned by his contributions from salary for extra duties performed as a Ministe etc.; subject to an over-all maximum of 75 p.c. of that best six-year average. The survivor benefits are as follows: (1) 60 p.c. of the member's pension entitlement to the widow widower; (2) if there is a surviving parent, 10 p.c. of the member's pension entitlement f each child up to three; and (3) if there is no surviving parent, 20 p.c. to the member pension entitlement for each child up to four. A member who was a member at Mar. 3 1970, could have decided to stay under the old plan, the only difference being that he mu now contribute on his expense allowance as well as his sessional allowance. All other iten that were applicable under the old plan remain in effect.

An Act to make provision for the retirement of members of the Senate (SC 1965, c. entitles a Senator appointed after June 2, 1965 to become a contributor under the provisio of the Members of Parliament Retiring Act. Senators appointed prior to that date ar who have not attained the age of 75 years, who elect under the provisions of this Act, a also entitled to become contributors. Under the provisions of the Retirement Act, amended, a Senator contributes, by reservation, 6 p.c. of his combined earnings (indemnit plus annual expense allowance) to the Consolidated Revenue Fund. A Senator appointe before June 2, 1965 who (*a*) within one year of attaining the age of 75 years resigns his pla in the Senate or (*b*) resigns due to some permanent infirmity disabling him from performi his duties in the Senate, may be granted an annuity equal to two thirds of his session indemnity for life. The widow of a person granted such an annuity may receive an annui equal to three fifths of the annuity to the ex-member of the Senate.

Every former Prime Minister who held office for four years will receive from t Consolidated Revenue Fund an allowance of two thirds of the annual salary provided f Prime Ministers under the Salaries Act, the allowance to commence when the form Prime Minister ceases to hold office, or attains the age of 70 years, whichever is the late and to continue during his lifetime. The widow of a Prime Minister will receive an annu payment of one third of the allowance that was being paid or that would have been pa to her husband, where he dies without receiving the allowance, such allowance to commen immediately after the death of her husband and to continue during her natural life or un her remarriage. None of these allowances is payable while the recipient is a Senator a member of the House of Commons.

The Federal Franchise.—The present federal franchise laws are contained in t Canada Elections Act (SC 1960, c. 39). The franchise is conferred upon all Canadi citizens or British subjects, men and women, who have attained the age of 21 years, a ordinarily resident in the electoral district on the date of the issue of the writ ordering election and, in the case of British subjects other than Canadian citizens, have been or narily resident in Canada for twelve months prior to polling day at such election. Perso denied the right to vote are:—

(1) the Chief Electoral Officer and the Assistant Chief Electoral Officer;
(2) judges appointed by the Governor General in Council;
(3) the returning officer for each electoral district;

(4) persons undergoing punishment as inmates of any penal institution for the commission of any offence;
(5) persons restrained of their liberty or deprived of the management of their property by reason of mental disease; and
(6) persons disqualified under any law relating to the disqualification of electors for corrupt and illegal practices.

Prior to July 1, 1960, the list of persons denied the right to vote included "Indians dinarily resident on an Indian reserve who were not members of His Majesty's Forces World Wars I or II or who did not execute a waiver of exemption under the Indian t from taxation on and in respect of personal property". Legislation proclaimed on the ove-mentioned date confers upon all Indians who have attained the age of 21 years the ht to vote at federal elections, without taking from them any of the rights and privileges which they are entitled under the Indian Act. The Eskimos who are Canadian citizens ssess the right to vote in federal elections, and the assumption of that right in the far-ng communities of the Canadian Far North has grown with the establishment by the overnment of electoral districts and polling facilities.

The Canadian Forces Voting Rules set out in Schedule II to the Canada Elections t prescribe voting procedure for members of the Armed Forces of Canada and also for terans in receipt of treatment or domiciliary care in certain institutions.

11.—Voters on the Lists and Votes Polled at the Federal General Elections of 1962, 1963, 1965 and 1968

NOTE.—Corresponding statistics for the General Elections of 1911, 1917, 1921 and 1925 are given in the 1926 Year ok, p. 82; those for 1926 in the 1945 edition, p. 66; those for 1930 and 1935 in the 1948-49 edition, p. 94; those for 1940 he 1956 edition, p. 81; those for 1945 in the 1957-58 edition, p. 57; those for 1949, 1953 and 1957 in the 1962 edition. 71; and those for 1958 in the 1966 edition, p. 90.

Province or Territory	Voters on the Lists				Votes Polled			
	1962	1963	1965	1968	1962	1963	1965	1968
	No.	No.	No.	No.	No.	No.	No.	No.
wfoundland	215,565	221,321	226,082	237,594	155,263	152,175	148,392	161,570
nce Edward Island	56,542	57,029	56,484	58,216	73,509[1]	69,486[1]	72,006[1]	51,225
va Scotia	398,161	401,874	401,521	412,791	423,556[2]	419,352[2]	420,146[2]	339,600
w Brunswick	302,313	304,732	304,734	317,912	252,053	245,557	244,184	254,716
ebec	2,728,191	2,807,634	2,933,031	3,083,260	2,117,644	2,143,246	2,073,314	2,229,345
tario	3,397,647	3,455,363	3,609,895	3,846,064	2,719,020	2,799,870	2,770,222	2,973,745
nitoba	508,920	516,525	517,928	531,563	393,023	401,870	382,362	403,272
skatchewan	502,495	505,551	508,733	517,598	426,426	419,973	404,631	416,793
berta	680,253	700,920	725,447	774,565	505,752	552,164	534,870	567,416
itish Columbia	891,686	921,074	972,063	1,059,959	691,930	740,229	731,438	804,108
kon Territory[3]	6,762	6,878	6,660	7,559	5,978	6,051	5,760	6,563
rthwest Territories[4]	11,790	11,856	12,326	13,807	8,502	8,663	9,403	9,563
Totals	**9,700,325**	**9,910,757**	**10,274,904**	**10,860,888**	**7,772,656**	**7,958,636**	**7,796,728**	**8,217,916**

[1] Each voter in the double-member constituency of Queens County, P.E.I., had two votes; in 1965, 26,250 voters the list cast 44,895 votes. [2] Each voter in the double-member constituency of Halifax, N.S., had two tes; in 1965, 124,633 voters on the list cast 184,153 votes. [3] Electoral District of Yukon. [4] Electoral strict of Mackenzie River in 1962 and Electoral District of Northwest Territories in 1963, 1965 and 1968.

Subsection 3.—The Judiciary

he Federal Judiciary

The Parliament of Canada is empowered by Sect. 101 of the British North America ct from time to time to provide for the constitution, maintenance and organization of a neral Court of Appeal for Canada and for the establishment of any additional courts for e better administration of the laws of Canada. Under this provision, Parliament has tablished the Supreme Court of Canada, the Exchequer Court of Canada and certain iscellaneous courts.

Supreme Court of Canada.—This Court, first established in 1875 and now governe by the Supreme Court Act (RSC 1952, c. 259), consists of a chief justice, who is called th Chief Justice of Canada, and eight puisne judges. The chief justice and the puisne judge are appointed by the Governor in Council and they hold office during good behaviour bu are removable by the Governor General on address of the Senate and the House of Com mons. They cease to hold office upon attaining the age of 75 years. The Court sits a Ottawa and exercises general appellate jurisdiction throughout Canada in civil and crimina cases. The Court is also required to consider and advise upon questions referred to it b the Governor in Council and it may also advise the Senate or the House of Commons o private Bills referred to the Court under any rules or orders of the Senate or of the Hous of Commons.

Appeals may be brought from any final judgment of the highest court of final reso in a province in any case where the amount or value of the matter in controversy exceed the sum of $10,000. An appeal may be brought from any other final judgment with leav of the highest court of final resort in the province; if such court refuses to grant leave, th Supreme Court of Canada may grant leave to appeal. The Supreme Court may gran leave to appeal from any judgment whether final or not. Appeals in respect of indictabl offences are regulated by the Criminal Code. Appeals from federal courts are regulate by the statute establishing such courts. The judgment of the Supreme Court of Canad in all cases is final and conclusive.

12.—Chief Justice and Judges of the Supreme Court of Canada, as at May 1, 1970

(In order of seniority)

Name	Date of Appointment
Rt. Hon. Mr. Joseph Honoré Gérald Fauteux, Chief Justice of Canada	Mar. 23, 197
Hon. Mr. Justice Douglas Charles Abbott	July 1, 195
Hon. Mr. Justice Ronald Martland	Jan. 15, 195
Hon. Mr. Justice Wilfred Judson	Feb. 5, 195
Hon. Mr. Justice Roland A. Ritchie	May 5, 195
Hon. Mr. Justice Emmett M. Hall	Nov. 23, 196
Hon. Mr. Justice Wishart Flett Spence	May 30, 196
Hon. Mr. Justice Louis-Philippe Pigeon	Oct. 6, 196
Hon. Mr. Justice Bora Laskin	Mar. 19, 197

[1] First appointed a Judge of the Supreme Court, Dec. 23, 1949.

Exchequer Court of Canada.—The Exchequer Court was first established in 187 as part of the Supreme Court of Canada but is now a separate court governed by th Exchequer Court Act (RSC 1952, c. 98). The Court consists of a president and six puisn judges who are appointed by the Governor in Council. The president and the puisne judge hold office during good behaviour but may be removed by the Governor General on addres of the Senate and the House of Commons. They cease to hold office upon attaining th age of 75 years. The Court sits at Ottawa and also at any other place in Canada whe sittings may be fixed by the Court. The jurisdiction of the Court extends to cases whe claims are made by or against the Crown in right of Canada. Proceedings against th Crown are taken by petition of right pursuant to the Petition of Right Act (RSC 195 c. 210).

An appeal lies to the Supreme Court of Canada from any final judgment of the Exequer Court in which the amount in controversy exceeds $500; an appeal also lies with ve of the Supreme Court in certain cases where the amount in controversy does not eed $500 or where the judgment is not final.

The Exchequer Court also exercises admiralty jurisdiction in Canada. This was first nferred in 1891 by the Admiralty Act (SC 1891, c. 29) and is now governed by the miralty Act (RSC 1952, c. 1). Under this statute, the Exchequer Court is continued a Court of Admiralty. The president and puisne judges of the Exchequer Court ercise admiralty jurisdiction throughout the whole of Canada. In addition, Canada is vided into various admiralty districts; a district judge in admiralty is appointed for each trict. Appeals to the Supreme Court of Canada from judgments of the president or e puisne judges are governed by the general appeal provisions in the Exchequer Court t. Appeals may be taken from a final judgment of a district judge in admiralty either the Exchequer Court or direct to the Supreme Court of Canada.

Miscellaneous Courts.—*Railway Act and National Transportation Act.*—The ilway Act, 1903 (RSC 1952, c. 234) established the Board of Railway Commissioners Canada as a court of record; by the Transport Act, 1938 (RSC 1952, c. 271) the name s changed to the Board of Transport Commissioners for Canada, and by the National ansportation Act, 1967 (SC 1966-67, c. 69) to the Canadian Transport Commission. is court exercises jurisdiction with respect to transport matters under the Railway Act d under the National Transportation Act, and with respect to telegraph and telephone tters under the Railway Act. The Governor in Council is given jurisdiction to vary or scind any order of the Commission and an appeal lies from the Commission to the Supreme urt of Canada upon a question of jurisdiction or a question of law.

Bankruptcy Act.—By virtue of Sect. 91(21) of the British North America Act, 1867, rliament has exclusive legislative jurisdiction in relation to bankruptcy and insolvency. the Bankruptcy Act (RSC 1952, c. 14) the superior courts of the provinces are contuted bankruptcy courts; original jurisdiction is conferred upon the trial courts and pellate jurisdiction is conferred upon the appeal courts of the provinces.

Income Tax Act and Estate Tax Act.—By the Income Tax Act (RSC 1952, c. 148) e Tax Appeal Board is established consisting of a chairman and not fewer than two or ore than four members with jurisdiction over appeals against income tax assessments. further appeal may be taken to the Exchequer Court. Under the Estate Tax Act C 1958, c. 29), the Tax Appeal Board also has jurisdiction to hear appeals from assessents under that Act.

National Defence Act.—The Court Martial Appeal Court was established in 1959 by amendment to the National Defence Act (SC 1959, c. 5). The judges of the Court are t fewer than four judges of the Exchequer Court of Canada designated by the Governor Council and such additional judges of a superior court of criminal jurisdiction as are ppointed by the Governor in Council. The Governor in Council designates one of the dges to be president of the Court. The Court hears appeals from courts martial respecting the legality of a finding of guilty on any charge and the legality of a sentence passed by court martial. An appeal lies from the Court Martial Appeal Court to the Supreme Court Canada on a question of law only.

rovincial and Territorial Judiciaries

Certain provisions of the British North America Act govern to some extent the proncial judiciaries. Under Sect. 92(14) the legislature of each province exclusively may ake laws in relation to the administration of justice in the province including the conitution, maintenance and organization of provincial courts both of civil and of criminal risdiction. Sect. 96 provides that the Governor General shall appoint the judges of e superior, district and county courts in each province, except those of the courts of

probate in Nova Scotia and New Brunswick. Sect. 100 provides that the salaries, allowances and pensions of judges of the superior, district and county courts (except the courts of probate in Nova Scotia and New Brunswick) are to be fixed and provided by the Parliament of Canada and these are set out in the Judges Act (RSC 1952, c. 159 and amendments). Under Sect. 99, the judges of the superior courts hold office during good behaviour but are removable by the Governor General on address of the Senate and the House of Commons. They cease to hold office upon attaining the age of 75 years. The tenure of office of district and county court judges is fixed by the Judges Act as being during good behaviour and their residence within the area for which the court is established.

Newfoundland.—*Supreme Court* (*Judicature Act, RSN 1952, c. 114, as amended*).—The Supreme Court of Newfoundland consists of a chief justice and three other judges, all appointed by the Governor in Council. The Court has original and appellate jurisdiction.

District Courts (*District Courts Act, RSN 1952, c. 116, as amended*).—District courts were set up under the District Courts Act. A district court judge has civil jurisdiction where the amount involved does not exceed $5,000 and on the criminal side he has the same jurisdiction as a county court judge in other provinces.

Stipendiary Magistrates and Justices of the Peace (*Summary Jurisdiction Act, RSN 1952, c. 117*).—Stipendiary magistrates and justices of the peace are appointed for the province. They have limited criminal and civil jurisdiction.

Prince Edward Island.—*Supreme Court* (*RSPEI 1951, c. 79*).—The Supreme Court of Prince Edward Island consists of a chief justice, known as the Chief Justice of Prince Edward Island, and three other judges, all appointed by the Governor in Council. The Court has original and appellate jurisdiction.

Court of Chancery (*RSPEI 1951, c. 21*).—The Court of Chancery consists of a chancellor, a vice-chancellor and the master of the rolls. The Chancellor is the Lieutenant-Governor; the Vice-Chancellor is one of the judges of the Supreme Court and the Master of the Rolls is one of the other judges of the Supreme Court. The Court has original jurisdiction in chancery matters.

County Courts (*RSPEI 1951, c. 35*).—There are three counties in the province, each with a county court and a judge. County courts have criminal and civil jurisdiction generally in actions involving amounts up to $1,000 but have no jurisdiction in cases involving title to or possession of land.

Magistrates and Justices of the Peace (*RSPEI 1951, c. 89*).—Magistrates and justices of the peace are appointed by the Lieutenant-Governor in Council. They have limited criminal and civil jurisdiction.

Nova Scotia.—*Supreme Court* (*Judicature Act, SNS 1950*).—The Supreme Court of Nova Scotia has an Appeal Division and a Trial Division. The former consists of the Chief Justice of Nova Scotia and two other judges and the latter consists of the Chief Justice of the Trial Division and five other judges.

County Courts (*RSNS 1967, c. 64*).—There are seven county court districts in Nova Scotia and a county court and judge for each district who is appointed by the Governor in Council. Each court has criminal jurisdiction under the Criminal Code and jurisdiction in civil cases involving amounts up to $10,000.

Probate Courts (*RSNS 1967, c. 238*).—County court judges are ex officio judges in probate. Probate matters are decided in the first instance by a registrar of probate and appeals may be taken to the probate judges. A registrar of probate is appointed for each county.

Magistrates.—There are 13 active stipendiary magistrates and 17 provincial magistrates, all appointed by the Lieutenant-Governor in Council. They have limited criminal jurisdiction and civil jurisdiction involving amounts up to $500.

Minor Courts of Civil Jurisdiction.—These are courts established pursuant to city charters, municipal courts and justices courts. The city and municipal courts have jurisdiction involving amounts up to $500 and justices courts have jurisdiction involving amounts up to $20 when one justice is sitting or up to $80 when two justices are sitting.

Juvenile Courts (*RSNS 1967, c. 31*).—The Child Welfare Act provides for the establishment of juvenile courts and the appointment of juvenile court judges. The courts exercise jurisdiction in juvenile matters under provincial statutes and are also juvenile courts under the federal Juvenile Delinquents Act. There are seven juvenile court judges.

Family Courts (*RSNS 1967, c. 98*).—This Act authorizes the establishment of family courts for any area within the province and for the appointment of judges. The courts exercise jurisdiction over juvenile matters, including juveniles and neglected children and the enforcement of maintenance legislation. Family courts now serve the metropolitan districts of Halifax and Sydney.

Court of Divorce and Matrimonial Causes (*RSNS, Third Series, c. 126*).—This court was established by a pre-Confederation statute and has jurisdiction in divorce and other matrimonial causes. Judges of the Supreme Court are also appointed judges of this court.

New Brunswick.—*Supreme Court* (*RSNB 1952, c. 120*).—The Supreme Court of New Brunswick has an Appeal Division and a Queen's Bench Division. The Appeal Division consists of a chief justice, known as the Chief Justice of New Brunswick, and three other judges; the Queen's Bench Division consists of a chief justice and five other judges. The Appeal Division has general appellate jurisdiction throughout the province and the Queen's Bench Division has unlimited original jurisdiction throughout the province in civil and criminal matters. All judges are appointed by the Governor in Council.

Court of Divorce and Matrimonial Causes (*RSNB 1952, c. 63*).—This court was established by a pre-Confederation statute which has continued in force to date. Although the Act stands unrepealed, no judge is appointed to it. The court now has jurisdiction only in matrimonial causes other than divorce, its divorce jurisdiction having been transferred to the Queen's Bench Division by the federal Divorce Act 1967-68.

County Courts (*RSNB 1952, c. 45*).—The province is divided into counties with a county court for each county or group of counties. There are six county court judges, appointed by the Governor in Council. These courts have criminal jurisdiction, jurisdiction in contracts up to $2,000 and jurisdiction in damage actions up to $2,000. They have no jurisdiction where title to land is brought in question or where the validity of any devise or bequest is disputed.

Probate Courts (*RSNB 1952, c. 175*).—A probate court is established by a provincial Act for each county and each such court is presided over by a judge appointed by the Lieutenant-Governor in Council. These courts have jurisdiction over estates.

Juvenile Courts (*RSNB 1952, c. 123*).—The Juvenile Courts Act provides for the establishment of a juvenile court for each place where the federal Juvenile Delinquents Act is in force. Fifteen judges have been appointed. These courts have jurisdiction in juvenile matters under provincial statutes and are also juvenile courts under the federal Juvenile Delinquents Act.

Provincial Court (*SNB 1969, c. 17*).—Provincial court judges have jurisdiction throughout the province in criminal matters under Part XVI of the federal Criminal Code and in quasi-criminal matters under any law or statute in force in the province.

Quebec.—*Court of Queen's Bench.*—This Court, established under the Quebec Courts of Justice Act (RSQ 1964, c. 20), is composed of a chief justice called the Chief Justice of the Province of Quebec, and 11 other judges, all appointed by the Governor in Council. The Court has appellate jurisdiction in the civil matters as set out in Sect. 42 of the Code of Civil Procedure, and appellate jurisdiction concerning convictions on indictments (Sects. 581 and 582). It also has original jurisdiction in criminal matters when an accused is committed to stand trial, and jurisdiction in accordance with the provisions of Sect. 719 of the federal Criminal Code relating to appeals against summary conviction.

Superior Court.—The Superior Court is a court of record and is composed of a chief justice, an associate chief justice and 85 puisne judges, all appointed by the Governor in Council. The Superior Court is the court of common law and has original jurisdiction in all suits or actions not specifically attributed to any other court by formal provision in any Act.

Provincial Court.—The Provincial Court consists of 102 judges appointed by the Lieutenant-Governor in Council, including a chief justice and an associate chief justice. Its jurisdiction is defined in Sect. 34 of the Code of Civil Procedure. It has exclusive jurisdiction except for that of the Superior Court in all matters where the amount at issue is less than $3,000 (increased from $1,000 on July 1, 1970), except in cases of requests for alimony and those reserved for the Exchequer Court of Canada.

Social Welfare Courts.—These courts are established in all judicial districts of Quebec. The number of judges, including a chief justice and an associate chief justice, must not exceed 40 and all are appointed by the Lieutenant-Governor in Council. These courts are authorized to hear cases of juvenile delinquents within the meaning of the federal Juvenile Delinquents Act and their jurisdiction also covers the enforcement of certain provincial laws, such as the Youth Protection Schools Act, the Quebec Public Charities Act, the Lunatic Asylums Act and the Adoption Act.

Court of the Sessions of the Peace.—This is a court of record composed of 50 judges including a chief justice residing in Montreal and a chief justice residing in Quebec City. All are appointed by the Lieutenant-Governor in Council and exercise, in criminal and penal matters, such powers as are conferred on them by federal or provincial legislation.

Magistrates' Courts.—Magistrates' courts are established in accordance with a by-law of a city or town and judges, who must be lawyers who have practised for at least three or five years depending upon whether the population of the municipality of residence is greater or less than 10,000, are appointed by the Lieutenant-Governor in Council.

Justices of the Peace.—Justices of the peace are appointed by the Lieutenant-Governor in Council and exercise the duties imposed on them by the Criminal Code and other federal laws, as well as by the Quebec Summary Convictions Act (RSQ 1964, c. 35) and other provincial Acts.

Ontario.—*Supreme Court (RSO 1960, c. 197).*—The Supreme Court of Ontario has two divisions, one known as the Court of Appeal for Ontario and the other as the High Court of Justice for Ontario. The Court of Appeal consists of a chief justice, called the Chief Justice of Ontario, and nine other judges. The High Court of Justice consists of a chief justice, known as the Chief Justice of the High Court, and 26 other judges. All judges are appointed by the Governor in Council. The Court of Appeal has general appellate jurisdiction throughout the province and the High Court of Justice has unlimited original jurisdiction in civil and criminal matters.

County and District Courts (RSO 1960, c. 76).—Ontario is divided into 48 counties and districts with a county or district court for each and one or more judges for each court. There is a chief judge and 87 other judges, all appointed by the Governor in Council. These courts have no criminal jurisdiction except on appeal from the decision of magistrates

d justices of the peace in summary conviction cases. They have jurisdiction in contracts d in personal property actions where the amount claimed does not exceed $3,000.

General Sessions of the Peace (*RSO 1960, c. 163*).—There is a court of general sessions the peace for each county and district in the province. Sittings are held quarterly in e Counties of York and Wentworth and semi-annually in the other counties and districts. he courts are presided over by the judge of the county court, acting as chairman. They with a jury and have jurisdiction to try any indictable offence except those set out in ct. 413 of the federal Criminal Code, which are within the exclusive jurisdiction of the perior courts.

County Court Judges Criminal Courts (*RSO 1960, c. 75*).—These are criminal courts ld in every county and district in the province for the speedy trial of indictable offences der Part XVIII of the Criminal Code. They are presided over by the county or district urt judge sitting without a jury. They have jurisdiction to try, on the election of the cused,. any indictable offence except those set out in Sect. 413 of the Criminal Code.

Surrogate Courts (*RSO 1950, c. 380*).—There is a surrogate court for each county or strict. The court has jurisdiction to deal with probate and administration matters and presided over by the county or district court judge.

Division Courts (*RSO 1960, c. 110*).—There are 206 division courts throughout Ontario, esided over by the county or district court judge who sits in the jurisdiction where the rticular division court is located. Jurisdiction is limited to cases involving up to $400 the counties and to $800 in the districts.

Provincial Courts (*Family Division*) (*SO 1968, c. 103, Pt. III*).—The juvenile courts r Ontario have jurisdiction in juvenile cases under provincial legislation; in addition they e juvenile courts for the purposes of the federal Juvenile Delinquents Act. The judges e appointed by the Lieutenant-Governor in Council.

Provincial Courts (*Criminal Division*) (*SO 1968, c. 103, Pt. II*).—Provincial judges e appointed by the Lieutenant-Governor in Council. They have limited criminal jurisdiction and are ex officio justices of the peace.

Justices of the Peace (*RSO 1960, c. 200*).—Justices of the peace have limited civil and iminal jurisdiction. They are appointed by the Lieutenant-Governor in Council.

Manitoba.—*Court of Appeal* (*RSM 1970, c. 240*).—The Court of Appeal consists of chief justice, called the Chief Justice of Manitoba, and four other judges. All judges are ppointed by the Governor in Council. The Court has general appellate jurisdiction roughout the province.

Court of Queen's Bench (*RSM 1970, c. 280*).—The Court consists of a chief justice, nown as the Chief Justice of the Queen's Bench, and seven other judges. All judges are ppointed by the Governor in Council. The Court has unlimited original jurisdiction in ivil and criminal cases throughout the province.

County Courts (*RSM 1970, c. 260*).—The province is divided into five judicial districts nd a number of county courts are established for each district. There are six judges for he Eastern Judicial District and each of the other districts has one judge. A judge has urisdiction over all county courts within the judicial district to which he is appointed. These courts have limited criminal jurisdiction and also jurisdiction, generally, in claims ot exceeding $2,000, but have no jurisdiction in certain types of actions such as recovery f land.

Surrogate Courts (*RSM 1970, c. 290*).—There is a surrogate court for each judicial istrict and the Surrogate Courts Act provides that the county court judge in each judicial istrict is to be the judge of the surrogate court of that district. These courts have jurisdiction and authority in relation to testamentary matters.

Family Courts (*RSM 1970, c. 230*).—The family courts are established under the Corrections Act (SM 1966, c. 12) and the territorial jurisdiction of each court is set out in the Order in Council establishing the court and appointing the judges. There are a number of judges appointed in each district, one of whom is designated the senior judge. A family court has jurisdiction over any or all charges, offences, and matters arising from or under any one or more of the following Acts: the Juvenile Delinquents Act (Canada), the Child Welfare Act, the Wives' and Children's Maintenance Act, the Reciprocal Enforcement of Maintenance Orders Act, the Parents' Maintenance Act, and such other Acts or matters as the Lieutenant-Governor in Council may designate.

Magistrates (*RSM 1970, c. M10*).—Magistrates are appointed by the Lieutenant-Governor in Council and, in addition to criminal jurisdiction, have jurisdiction to try actions for debt where the amount does not exceed $100. An appeal lies to a county court judge. There are 45 magistrates and a chief magistrate in the province. Under the Corrections Act, a magistrate is ex officio a family court judge.

Justices of the Peace (*RSM 1970, c. M10*).—Justices of the peace, appointed by the Lieutenant-Governor in Council, have limited criminal jurisdiction and also small-debt jurisdiction up to $100.

Saskatchewan.—*Court of Appeal* (*RSS 1965, c. 72*).—The Court of Appeal consists of a chief justice, called the Chief Justice of Saskatchewan, and four other judges. All judges are appointed by the Governor in Council. The Court has general appellate jurisdiction throughout the province.

Court of Queen's Bench (*RSS 1965, c. 73*).—The Court of Queen's Bench consists of a chief justice, called the Chief Justice of the Queen's Bench, and seven other judges. All judges are appointed by the Governor in Council. The Court has unlimited original jurisdiction in civil and criminal matters throughout the province.

District Court (*RSS 1965, c. 74*).—There is a court of record called the District Court for Saskatchewan, which has 18 district court judges appointed by the Governor in Council. The Court has jurisdiction generally in all cases where the claim does not exceed $5,000 but jurisdiction does not include cases where title to land is brought in question or where the validity of any devise or bequest is disputed. Jurisdiction is also excluded in certain personal actions such as malicious prosecution, malicious arrest, false imprisonment, libel, slander and breach of promise of marriage. The Court also has criminal jurisdiction.

Surrogate Court (*RSS 1965, c. 75*).—There is a Surrogate Court for Saskatchewan. The Surrogate Court Act provides that the judges of the District Court shall be the judges of the Surrogate Court. The Court has jurisdiction in probate matters.

Juvenile Courts (*RSS 1965, c. 268*).—Under the Child Welfare Act, a juvenile court for the province is established within the meaning of the federal Juvenile Delinquents Act for the purpose of dealing with juvenile delinquents and all causes and matters respecting delinquents. Judges of District and Magistrates' Courts and provincial magistrates are ex officio judges of the Juvenile Court.

Judges of the Magistrates' Courts (*RSS 1965, c. 110*).—Judges of the Magistrates' Courts are appointed by the Lieutenant-Governor in Council and have jurisdiction as such throughout Saskatchewan. No person shall be appointed a judge unless he is a member in good standing of the Bar of one of the provinces of Canada and has been such a member or a provincial magistrate for at least five years immediately before the day on which he is appointed. A judge of the Magistrates' Courts exercises criminal jurisdiction and is, by virtue of his office, a provincial magistrate and a justice of the peace for Saskatchewan.

Provincial Magistrates (*RSS 1965, c. 111*).—Provincial magistrates are appointed by the Lieutenant-Governor in Council and have jurisdiction throughout Saskatchewan. A provincial magistrate is, by virtue of his office, a justice of the peace for Saskatchewan.

Justices of the Peace (*RSS 1965, c. 112*).—Justices of the peace are appointed by the Lieutenant-Governor in Council and have jurisdiction as such throughout the province. A justice of the peace has limited criminal jurisdiction.

Small Claims Enforcement (*RSS 1965, c. 102*).—This Act applies to all actions for debt, damages or recovery of goods or chattels where the amount involved does not exceed $200 but jurisdiction does not include cases where title to land is brought in question or where the validity of any devise or bequest is disputed. Jurisdiction is also excluded in certain personal actions such as malicious prosecution, malicious arrest, false imprisonment, libel, slander, criminal conversation, seduction or breach of promise of marriage. Hearings are presided over by a judge appointed under the Magistrates' Courts Act or a provincial magistrate appointed under the Provincial Magistrates Act.

Alberta.—*Supreme Court* (*RSA 1955, c. 164*).—The Supreme Court consists of two branches or divisions, one designated as the Appellate Division of the Supreme Court of Alberta and the other as the Trial Division of the Supreme Court of Alberta. The Appellate Division consists of a chief justice, called the Chief Justice of Alberta, and six other judges. The Trial Division consists of a chief justice, called the Chief Justice of the Trial Division of the Supreme Court of Alberta, and 11 other judges. All judges of the Supreme Court are appointed by the Governor in Council. The Appellate Division exercises general jurisdiction throughout the province and the Trial Division has unlimited original jurisdiction in civil and criminal matters.

District Courts (*RSA 1955, c. 87*).—The District Courts Act provides for the formation of two courts of record—the District Court of the District of Northern Alberta and the District Court of the District of Southern Alberta. The former consists of a chief judge and seven other judges and the latter consists of a chief judge and six other judges. The district courts generally have jurisdiction in all matters where the claim does not exceed $2,000 and in criminal matters.

Surrogate Courts (*SA 1967, c. 79*).—The Surrogate Courts Act provides for the formation of two courts of record—the Surrogate Court of Northern Alberta and the Surrogate Court of Southern Alberta. The chief judges and other judges of the District Courts of Northern and Southern Alberta are named as the chief judges and other judges of the respective Surrogate Courts. The Surrogate Courts have jurisdiction in all matters relating to probate and guardianship.

Magistrates' Courts (*RSA 1955, c. 186*).—Magistrates are appointed by the Lieutenant-Governor in Council and are authorized to exercise the jurisdiction conferred upon a magistrate by Part XVI of the Criminal Code and have jurisdiction under the Small Claims Act in actions for debt not exceeding $500 and wage claims not exceeding six months wages.

Justices of the Peace (*RSA 1955, c. 186*).—Justices of the peace are appointed by the Lieutenant-Governor in Council and have limited jurisdiction in criminal matters.

Juvenile Courts (*RSA 1955, c. 166*).—The Juvenile Court Act provides for the establishment of the Juvenile Court of the Province of Alberta and every judge of the Supreme Court, every judge of the District Court and every magistrate is ex officio a judge thereof and a justice of the peace may act on written request. A juvenile court has jurisdiction to hear and determine offences charged against children under any statute of the province and, in addition, is a juvenile court for the purposes of the federal Juvenile Delinquents Act.

Family Courts (*RSA 1955, c. 108*).—The Family Court Act provides that there shall be a family court for the province and the Lieutenant-Governor in Council may appoint any magistrate as a judge of such court. Family courts provide counselling service for families with domestic problems; have jurisdiction under the Domestic Relations Act to grant a maintenance order on behalf of a deserted wife and her family or on behalf of the children only; and also adjudicate in matters of non-support, common assault where a

husband assaults a wife, a wife assaults a husband, or a parent assaults a child, pursuant to the provisions of the Criminal Code, as well as any charge against an adult under the provisions of the Child Welfare Act.

British Columbia.—*Court of Appeal* (*RSBC 1960, c. 82*).—The Court of Appeal consists of a chief justice, called the Chief Justice of British Columbia, and eight other judges called Justices of Appeal. All are appointed by the Governor in Council. The Court exercises general appellate jurisdiction.

Supreme Court (*RSBC 1960, c. 374*).—The Supreme Court consists of a chief justice, called the Chief Justice of the Supreme Court, and 16 other judges called Judges of the Supreme Court. All are appointed by the Governor in Council. The Court has unlimited original jurisdiction in civil and criminal matters throughout the province.

County Courts (*RSBC 1960, c. 81*).—There are eight counties in British Columbia with a county court for each county and one or more judges for each county court, all appointed by the Governor in Council. Each county court has jurisdiction in all matters where the claim does not exceed $3,000 generally, and in some cases up to $5,000, and has jurisdiction in criminal and probate matters. The courts have no jurisdiction in certain types of personal actions such as libel, slander or breach of promise of marriage.

Provincial Court (*SBC 1969, c. 28*).—Effective Aug. 1, 1969, the Provincial Court of British Columbia came into being. Under this legislation all persons who were at that time magistrates or justices of the peace became either judges of the Provincial Court or justices of the peace as the case may be. The Court has three divisions—the ordinary or Criminal Division, the Family Court Division, and the Small Claims Division. All judges have jurisdiction in all divisions of the Court with province-wide territorial jurisdiction and with authority to deal with all matters formerly within the jurisdiction of magistrates, judges of the Family and Children's Court, and Small Debts Courts. In the Small Claims Division (formerly Small Debts Courts), the monetary limitation is $500 and an appeal lies to the nearest county court or to a judge of the Supreme Court. Judges of the Provincial Court and justices of the peace are appointed by the Lieutenant-Governor in Council. Judges of the Provincial Court have jurisdiction for the purposes of the federal Juvenile Delinquents Act, and also jurisdiction under the provincial Protection of Children Act, the Landlord and Tenant Act, and the Summary Convictions Act.

Yukon and Northwest Territories.—The Yukon Act and the Northwest Territories Act each provide for a superior court of record called the Territorial Court, consisting of one or more judges appointed by the Governor in Council. The Court of Appeal for the Northwest Territories consists of justices of the Alberta Court of Appeal and the Yukon Territorial Court judge. The Court of Appeal for the Yukon Territory consists of the justices of the British Columbia Court of Appeal and the Northwest Territories Territorial Court judge. After the Territories assume administration of justice on Apr. 1, 1971, the Commissioners in Council of both Territories will have the power to appoint coroners, magistrates, justices of the peace and other court officials, leaving only judges of Superior Court rank to be appointed by the Governor in Council. The Attorney General of Canada, however, remains the Attorney General of the Yukon Territory and the Northwest Territories.

Salaries, Allowances and Pensions of Judges

Sect. 100 of the British North America Act provides that the "Salaries, Allowances, and Pensions of the Judges of the Superior, District, and County Courts (except the Courts of Probate in Nova Scotia and New Brunswick) and of the Admiralty Courts in Cases where the Judges thereof are for the Time being paid by Salary, shall be fixed and provided by the Parliament of Canada". These are provided by the Judges Act.

The salary of the Chief Justice of Canada is $40,000 per annum and the salaries of the isne judges of the Supreme Court of Canada are $35,000 per annum. The salary of the esident of the Exchequer Court of Canada is $32,000 per annum and the salaries of the isne judges are $28,000 per annum. The salaries of the various district judges in miralty, who are usually judges of other superior courts, are as follows: Quebec, $1,500; ova Scotia, $1,000; New Brunswick, $1,000; Prince Edward Island, $800; British Columbia, ,500; Ontario, $1,500; and there are three district judges of the Admiralty District of ewfoundland, each of whom receives a salary of $333.33 per annum. The district judge the Admiralty District of Manitoba receives no salary.

All chief justices of provincial superior courts and the associate chief justice of the perior Court of Quebec receive salaries of $30,000 per annum; the puisne judges of these urts and the two territorial courts receive salaries of $26,000 per annum. The chief dges, judges and junior judges of all county and district courts receive salaries of $19,000 r annum.

On Mar. 1, 1967, the Judges Act was amended to provide that under certain conditions ery judge who is in receipt of a salary under the Judges Act, except District Judges in dmiralty, shall be paid an additional salary of $2,000 per annum as compensation for any tra-judicial services that he may be called upon to perform by the Government of Canada the government of a province, and for the incidental expenditures that the fit and proper ecution of his office as judge may require and, in the case of the judge of the territorial urts of the Yukon Territory and the Northwest Territories, as a northern allowance.

Travelling Allowances.—The Judges Act provides that a judge of a superior or county urt or a district judge in admiralty who, for the purpose of performing any function duty as such judge, attends at any place other than that at which or in the immediate cinity of which he is by law obliged to reside is entitled to be paid, as a travelling allowance, s moving or transportation expenses and reasonable travelling and other expenses in- rred by him in so attending. If a judge uses his personal automobile because of the lack good public transportation facilities, he is paid a mileage allowance.

Annuities.—Judges' annuities are non-contributory and the statutory retirement age 75 years. The Governor in Council may grant to (1) a judge who has continued in dicial office for at least 15 years and has attained the age of 70 years, if he resigns his fice, (2) a judge who has continued in judicial office for at least 15 years, if he resigns his fice and in the opinion of the Governor in Council the resignation is conducive to the tter administration of justice or is in the national interest, (3) a judge who has become flicted with some permanent infirmity disabling him from the due execution of his office, he resigns his office or by reason of such infirmity is removed from office, or (4) a judge ho ceases to hold office by reason of his having attained the age of 75 years, if he has held dicial office for at least 10 years or if he held judicial office on the day this section came to force (Aug. 10, 1960), an annuity not exceeding two thirds of the salary annexed to the fice held by him at the time of his resignation, removal or ceasing to hold office, as the case ay be. An annuity granted to a judge shall commence on the day of his resignation, moval or ceasing to hold office and shall continue during his natural life.

The Governor in Council may grant to the widow of a judge who dies while in office an nuity not exceeding two ninths of the salary of the judge at the date of his death, to mmence immediately after the death of the judge and to continue thenceforth during her tural life. Where a judge who was granted an annuity upon his retirement dies, the overnor in Council may grant to the widow an annuity not exceeding one third of the nuity that was granted to him. Two ninths of salary and one third of annuity are the me amount in dollars. An annuity granted to the widow of a judge ceases upon her marriage. No annuity may be granted if the widow married the judge after he ceased hold office.

Section 2.—Provincial and Territorial Governments*

In each of the provinces, The Queen is represented by a Lieutenant-Governor appointe by the Governor General in Council. The Lieutenant-Governor acts on the advice and wit the assistance of his Ministry or Executive Council which is responsible to the Legislatur and resigns office under circumstances similar to those described on p. 70 concerning th Federal Government.

The Legislature of each province is unicameral, consisting of the Lieutenant-Governo and a Legislative Assembly. The Legislative Assembly is elected by the people for statutory term of five years but may be dissolved within that period by the Lieutenant Governor on the advice of the Premier of the province.

The source of legislative authority of the Provincial Legislatures is the British Nort America Act, 1867 (Br. Stat. 1867, c. 3 and amendments). Under Sect. 92 of the Act, th Legislature of each province exclusively may make laws in relation to the following matters amendment of the constitution of the province except as regards the Lieutenant-Governor direct taxation within the province; borrowing of money on the credit of the province establishment and tenure of provincial offices and appointment and payment of provincia officers; the management and sale of public lands belonging to the province and of th timber and wood thereon; the establishment, maintenance and management of publi and reformatory prisons in and for the province; the establishment, maintenance an management of hospitals, asylums, charities and eleemosynary institutions in and for th province, other than marine hospitals; municipal institutions in the province; shop, saloon tavern, auctioneer and other licences issued for the raising of provincial or municipa revenue; local works and undertakings other than interprovincial or international lines ships, railways, canals, telegraphs, etc., or works which, although wholly situated withi one province, are declared by the Federal Parliament to be for the general advantage eithe of Canada or of two or more provinces; the incorporation of companies with provincia objects; the solemnization of marriage in the province; property and civil rights in th province; the administration of justice in the province including the constitution, main tenance and organization of provincial courts both of civil and of criminal jurisdictio including procedure in civil matters in these courts; the imposition of punishment by fine penalty or imprisonment in enforcing any law of the province relating to any of the afore said subjects; generally all matters of a merely local or private nature in the province

Further, in and for each province the Legislature exclusively may, under Sect. 9 make laws in relation to education subject to certain restrictions relating to the establish ment of schools by religious minorities. These powers with similar restrictions wer conferred on the more recently admitted provinces on their inclusion in the federatio

The Provincial Legislatures may also make laws under Sect. 95 in relation to agr culture and immigration, subject to any laws of the Parliament of Canada in relation t these subjects.

Provincial Franchise.—Details regarding qualifications and disqualifications of th franchise are contained in the Elections Act of each province. In general, every perso male or female, at a specified age (18 to 21 years) who is a Canadian citizen or (in certai provinces) other British subject, who complies with certain residence requirements in th province and the electoral district of polling and who falls under no statutory disqualif cations, is entitled to vote. Voting privileges are given to persons in Prince Edward Islan Quebec, Manitoba and Saskatchewan at the age of 18, in Newfoundland, Alberta and Britis Columbia at 19 years, and in the remaining provinces at 21 years.

* Except where indicated, the information given in this Section is brought up to May 1, 1970. Any importa changes occurring between that date (or the date given) and the time of going to press will be found in an Append to this volume.

Subsection 1.—Newfoundland

The Government of Newfoundland consists of a Lieutenant-Governor, an Executive uncil and a Legislative Assembly. The Legislative Assembly has 42 members elected a term of five years. The Legislature elected Sept. 8, 1966 is the 34th in the history Newfoundland and the 6th since Confederation. Lieutenant-Governors from the date Confederation, Mar. 31, 1949, to 1968 are cited in the 1969 Year Book, p. 80; since r. 2, 1969, the position has been held by the Hon. E. John A. Harnum. The first Minis-, formed on July 13, 1949 under the leadership of the Hon. Joseph R. Smallwood, was l in office on May 1, 1970.

The Premier receives a salary of $12,000 and the other Cabinet Ministers $11,000 per num, plus a sessional indemnity of $5,666.67 and a travelling and expense allowance of 833.33. Each member of the House of Assembly receives a sessional indemnity of 666.67 plus a travelling and expense allowance of $2,833.33. The Leader of the Opposi-n receives an additional allowance of $5,000.

13.—Legislatures of Newfoundland, 1949-70, as at May 1, 1970

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
ay 27, 1949	1st	4	July 11, 1949	Nov. 3, 1951
ov. 26, 1951	2nd	7	Mar. 11, 1952	Sept. 10, 1956
t. 2, 1956	3rd	3	Mar. 19, 1957	July 28, 1959
g. 20, 1959	4th	4	Apr. 20, 1960	Mar. 20, 1962
ov. 19, 1962	5th	4	Mar. 20, 1963	Aug. 17, 1966
pt. 8, 1966	6th	[1]	Nov. 30, 1966	[1]

[1] Life of Legislature not expired at May 1, 1970.

14.—First Ministry of Newfoundland, as at May 1, 1970

(Party standing at latest General Election, Sept. 8, 1966: 38 Liberal and 4 Progressive Conservative.)

Office	Name	Date of First Appointment	Date of Present Appointment
emier	Hon. J. R. Smallwood	Apr. 1, 1949	Apr. 1, 1949
sident of the Council	Hon. L. R. Curtis	Apr. 1, 1949	Sept. 8, 1966
nister of Labour	Hon. W. J. Keough	July 29, 1949	June 12, 1966
nister of Public Works	Hon. J. R. Chalker	Apr. 4, 1950	May 1, 1957
nister without Portfolio	Hon. P. J. Lewis	Dec. 15, 1951	Dec. 15, 1951
nister of Education and Youth	Hon. F. W. Rowe	May 21, 1952	July 17, 1968
nister of Provincial Affairs	Hon. G. A. Frecker	Aug. 26, 1959	Dec. 7, 1964
nister of Fisheries	Hon. A. J. Maloney	Aug. 8, 1966	{Aug. 8, 1966 Sept. 26, 1967
nister of Labrador Affairs	Hon. E. W. Winsor	July 17, 1968	July 17, 1968
nister without Portfolio	Hon. G. I. Hill	July 17, 1968	July 17, 1968
nister of Mines, Agriculture and Resources	Hon. W. R. Callahan	July 17, 1968	July 17, 1968
nister of Highways	Hon. H. G. Starkes	Nov. 5, 1969	Nov. 5, 1969
nister of Finance	Hon. E. S. Jones	Dec. 7, 1964	Nov. 5, 1969
nister of Justice	Hon. L. R. Curtis	Apr. 1, 1949	Oct. 17, 1969
nister of Health	Hon. E. M. Roberts	July 17, 1968	July 17, 1968
nister of Community and Social Develop-ment	Hon. W. N. Rowe	July 17, 1968	July 17, 1968
nister of Social Services and Rehabilita-ion	Hon. S. A. Neary	July 17, 1968	July 17, 1968
nister of Supply and Services	Hon. J. A. Nolan	July 17, 1968	July 17, 1968
nister of Municipal Affairs and Housing	Hon. E. N. Dawe	Nov. 5, 1969	Nov. 5, 1969

Subsection 2.—Prince Edward Island

The Government of Prince Edward Island consists of a Lieutenant-Governor, an xecutive Council and a Legislative Assembly. Lieutenant-Governors from Confederation 873) to 1959 are cited in the 1960 Year Book, p. 105; since that date, the position has

been held by the Hon. F. W. Hyndman, appointed effective Mar. 31, 1958, followed b the Hon. W. J. MacDonald, appointed effective Aug. 1, 1963, and the Hon. J. Georg MacKay, appointed effective Oct. 6, 1969.

The Legislative Assembly elected May 11, 1970 is the 52nd in the history of Princ Edward Island Legislatures and the 27th since Confederation. It has 32 members fro 16 electoral districts who may serve for a statutory term of five years. Each distric elects one Councillor and one Assemblyman. Premiers from Confederation to 1959 ar listed in the 1960 Year Book, p. 105. The Hon. Walter R. Shaw was Premier from Sept. 1 1959 until the present Premier took office following the General Election of May 30, 196

The annual salary of the Premier is $9,000, of a Cabinet Minister $6,000 and of Minister without Portfolio $3,600. A member of the Assembly receives $2,666.67 fo each regular session attended by him and an additional amount of $1,333.33, tax-fre for travelling and other expenses incurred in connection with session attendance an representing his district; the Speaker of the Assembly receives a further additional sum c $1,000 and an additional amount of $500, tax-free, for travelling and other expenses ir curred in connection with his official duties for each session; to cover like expenditure the Deputy Speaker receives a further additional sum of $600 and an additional amount c $300, tax-free, and the Leader of the Opposition a further additional sum of $1,666.6 and an additional amount of $833.33, tax-free. Payment for indemnity for travelling an other expenses incurred by a member of the Legislature, the Speaker, the Deputy Speake and the Leader of the Opposition accrue from his election to the Legislature and are pai monthly. No sessional indemnity or expenses are paid for any special session of th Legislature.

15.—Legislatures of Prince Edward Island, 1955-70, as at June 25, 1970

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 75; for 1924-35 in the 19 edition, p. 110; and for 1936-47 in the 1963-64 edition, p. 82.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
Apr. 26, 1951	22nd	6	Oct. 23, 1951	Apr. 27, 195
May 25, 1955	23rd	4	Feb. 2, 1956	Aug. 3, 195
Sept. 1, 1959	24th	4	Mar. 1, 1960	Nov. 8, 196
Dec. 10, 1962	25th	4	Mar. 14, 1963	Apr. 14, 196
May 30, 1966	26th	4	Nov. 23, 1966	Mar. 26, 197
May 11, 1970	27th	[1]	June 2, 1970	[1]

[1] Life of Legislature not expired at June 25, 1970.

16.—Twenty-sixth Ministry of Prince Edward Island, as at June 25, 1970

(Party standing at latest General Election, May 11, 1970: 27 Liberal and 5 Progressive Conservative.)

Office	Name	Date of First Appointment	Date of Present Appointment
Premier and Minister of Development	Hon. ALEXANDER B. CAMPBELL	July 28, 1966	July 28, 196 Apr. 22, 196
Minister of Public Works and Minister of Highways	Hon. GEORGE J. FERGUSON	July 28, 1966	July 28, 196
Minister of Education and President of the Executive Council	Hon. GORDON L. BENNETT	July 28, 1966	July 28, 196
Provincial Secretary and Provincial Treasurer	Hon. T. EARLE HICKEY	July 28, 1966	July 28, 196
Minister of Municipal Affairs and Minister of Fisheries	Hon. BRUCE L. STEWART	June 1, 1970	June 1, 197
Minister of Tourist Development	Hon. M. LORNE BONNELL	June 16, 1955	July 28, 196
Minister of Labour and Manpower Resources, Attorney and Advocate General and Minister of Industry and Natural Resources	Hon. J. ELMER BLANCHARD	July 28, 1966	July 28, 196 June 1, 197
Minister of Agriculture	Hon. DANIEL J. MACDONALD	July 28, 1966	July 28, 196
Minister without Portfolio	Hon. ROBERT E. CAMPBELL	Nov. 30, 1966	Nov. 30, 196
Minister of Health and Minister of Welfare	Hon. JOHN H. MALONEY	June 25, 1970	June 25, 197

Subsection 3.—Nova Scotia

The Government of Nova Scotia consists of a Lieutenant-Governor, an Executive Council and a House of Assembly. Lieutenant-Governors from Confederation (1867) to 59 are cited in the 1960 Year Book, p. 106; since that date the position has been held Maj.-Gen. the Hon. E. C. Plow, commissioned to office Sept. 1, 1958, followed by the on. H. P. MacKeen, commissioned to office Mar. 1, 1963, and the Hon. Victor deB. Oland, mmissioned to office July 22, 1968.

The Legislature has 46 members elected for a maximum term of five years. The gislature elected May 30, 1967 is the 49th in Nova Scotia's history and the 26th since nfederation. Premiers from Confederation to 1959 are listed in the 1960 Year Book, 107; the Hon. R. L. Stanfield was the Premier at that time and held office until 1967 hen the present Premier assumed office.

The Premier of the province receives a salary of $18,500 per annum and each Cabinet inister a salary of $16,500 per annum. Each member of the House of Assembly receives sessional indemnity of $5,000 and an allowance of $2,500 for expenses incidental to the scharge of his duties. The Leader of the Opposition receives an allowance of $16,500 addition to his sessional indemnity.

17.—Legislatures of Nova Scotia, 1955-70, as at May 1, 1970

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 76; for 1924-33 in the 1938 tion, p. 111; and for 1933-49 in the 1963-64 edition, p. 83.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
ay 26, 1953	22nd	3	Feb. 24, 1954	Sept. 20, 1956
ct. 30, 1956	23rd	3	Feb. 27, 1957	Apr. 26, 1960
ne 7, 1960	24th	3	Feb. 8, 1961	Aug. 29, 1963
ct. 8, 1963	25th	5	Feb. 6, 1964	Apr. 20, 1967
ay 30, 1967	26th	[1]	Dec. 1, 1967	[1]

[1] Life of Legislature not expired at May 1, 1970.

18.—Seventeenth Ministry of Nova Scotia, as at May 1, 1970

(Party standing at latest General Election, May 30, 1967: 40 Progressive Conservative and 6 Liberal.)

Office	Name	Date of First Appointment	Date of Present Appointment
emier and Chairman of the Nova Scotia Power Commission	Hon. GEORGE I. SMITH	Nov. 20, 1956	Sept. 13, 1967
torney General and Minister of Public Health	Hon. RICHARD A. DONAHOE	Nov. 20, 1956	Nov. 20, 1956
ovincial Secretary and Minister in charge of the Liquor Control Act	Hon. EDWARD D. HALIBURTON	Nov. 20, 1956	May 10, 1968
nister of Municipal Affairs	Hon. W. S. K. JONES	Apr. 21, 1960	Sept. 23, 1969
nister in charge of the Water Act	Hon. D. R. MACLEOD	July 6, 1964	Nov. 1, 1968
nister of Finance and Economics and Minister of Labour	Hon. T. J. MCKEOUGH	July 6, 1964	Sept. 23, 1969 Dec. 21, 1966
nister of Highways	Hon. I. W. AKERLEY	July 6, 1964	May 10, 1968
nister of Education	Hon. G. J. DOUCET	July 6, 1964	Dec. 14, 1967
nister of Agriculture and Marketing	Hon. H. A. VENIOT	May 10, 1968	May 10, 1968
nister of Lands and Forests and Minister in charge of Housing	Hon. G. A. SNOW	Sept. 3, 1968	Sept. 30, 1969
nister of Mines and Minister in charge of Human Rights	Hon. PERCY GAUM	July 16, 1968	Feb. 21, 1969
nister of Public Works and Minister of Fisheries	Hon. J. M. BUCHANAN	Sept. 23, 1969	Sept. 23, 1969
nister of Public Welfare	Hon. G. A. TIDMAN	Sept. 23, 1969	Sept. 23, 1969
nister of Trade and Industry	Hon. G. C. RITCEY	Sept. 23, 1969	Sept. 23, 1969

Subsection 4.—New Brunswick

The Government of New Brunswick has a Lieutenant-Governor, an Executive Council and a House of Assembly. Lieutenant-Governors since Confederation (1867) to 1959 are cited in the 1960 Year Book, p. 108; since that date, the position has been held by the Hon. J. Leonard O'Brien, appointed June 6, 1958, followed by the Hon. John B. McNair, appointed June 9, 1965, and the Hon. W. S. Bird, appointed Feb. 1, 1968.

The Legislature elected Oct. 23, 1967 is the 46th in New Brunswick's history and the 19th since Confederation. It has 58 members who are elected for a statutory term of five years. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 108; the present Premier assumed office in 1960.

The Premier receives $20,000 per annum in addition to the salary for any other portfolio he may hold. The salary of each Cabinet Minister is $12,000 and the amount paid as indemnity to each member of the House of Assembly is $5,000 plus an additional $2,500 allowance for expenses. The Leader of the Opposition receives an additional $8,000 and the Speaker receives an allowance of $1,000 in addition to the regular indemnity.

19.—Legislatures of New Brunswick, 1955-70, as at May 1, 1970

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 77; for 1924-35 in the 1936 edition, p. 112; and for 1936-48 in the 1963-64 edition, p. 84.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
Sept. 22, 1952	42nd	4	Feb. 12, 1953	Apr. 17, 1956
June 18, 1956	43rd	4	Feb. 21, 1957	May 19, 1960
June 27, 1960	44th	3	Nov. 17, 1960	Mar. 12, 1963
Apr. 22, 1963	45th	5	May 28, 1963	Sept. 8, 1967
Oct. 23, 1967	46th	[1]	Feb. 27, 1968	[1]

[1] Life of Legislature not expired at May 1, 1970.

20.—Twenty-third Ministry of New Brunswick, as at May 1, 1970

(Party standing at latest General Election, Oct. 23, 1967: 32 Liberal and 26 Progressive Conservative.)

Office	Name	Date of First Appointment	Date of Present Appointment
Premier and (Acting) Minister of Youth	Hon. LOUIS J. ROBICHAUD	July 12, 1960	July 12, 1966 Sept. 16, 1968
Minister of Justice	Hon. BERNARD A. JEAN	Apr. 6, 1966	Apr. 6, 1966
Minister of Finance	Hon. L. G. DESBRISAY	July 12, 1960	July 12, 1960
Provincial Secretary	Hon. J. E. LEBLANC	July 12, 1960	May 18, 1965
Minister of Highways	Hon. A. F. RICHARD	July 12, 1960	July 12, 1960
Minister of Public Works	Hon. R. D. DOUCET	Nov. 15, 1967	Nov. 15, 1967
Minister of Natural Resources	Hon. WILLIAM R. DUFFIE	July 12, 1960	Mar. 22, 1966
Minister of Agriculture and Rural Development	Hon. J. ADRIEN LEVESQUE	July 12, 1960	July 12, 1960
Minister of Health and Welfare	Hon. L. NORBERT THERIAULT	May 18, 1965	Nov. 15, 1967
Minister of Labour	Hon. B. F. NADEAU	Nov. 15, 1967	Feb. 11, 1970
Minister of Education	Hon. W. W. MELDRUM	May 18, 1965	Apr. 6, 1966
Minister of Municipal Affairs	Hon. R. J. HIGGINS	May 18, 1965	Feb. 11, 1970
Minister of Fisheries	Hon. R. ERNEST RICHARD	May 28, 1963	July 8, 1963
Minister of Economic Growth	Hon. H. H. WILLIAMSON	Nov. 15, 1967	Feb. 11, 1970
Chairman, New Brunswick Electric Power Commission	Hon. H. GRAHAM CROCKER	July 12, 1960	May 18, 1965

Subsection 5.—Quebec

The Government of Quebec consists of a Lieutenant-Governor, an Executive Council and a National Assembly. The Legislative Council—the upper chamber of the Quebec Government for 101 years—was abolished by Act of the Quebec Legislature on Nov. 29, 1968, effective Dec. 31, 1968, and by the same Act the name of the Legislative Assembly was changed to "National Assembly of Quebec".

Lieutenant-Governors from Confederation (1867) to 1959 are cited in the 1960 Year Book, p. 109; since that date the position has been held by the Hon. Onésime Gagnon, commissioned to office Feb. 14, 1958, followed by the Hon. Paul Comtois, commissioned to office Oct. 6, 1961, and the Hon. Hugues Lapointe, commissioned to office Feb. 22, 1966.

The National Assembly has 108 members elected for a maximum period of five years. Prime Ministers of Quebec from Confederation to 1959 are listed in the 1960 Year Book, p. 110; the Hon. Jean Lesage became Prime Minister in 1960, the Hon. Daniel Johnson in 1966, the Hon. Jean-Jacques Bertrand in 1968 and Mr. Robert Bourassa on Apr. 29, 1970.

21.—Legislatures of Quebec, 1955-70, as at June 9, 1970

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 78; for 1924-35 in the 1938 edition, p. 113; and for 1936-48 in the 1963-64 edition, p. 85.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
July 16, 1952	24th	4	Nov. 12, 1952	Apr. 25, 1956
June 20, 1956	25th	4	Nov. 14, 1956	Apr. 27, 1960
June 22, 1960	26th	3	Sept. 20, 1960	Sept. 19, 1962
Nov. 15, 1962	27th	6	Jan. 15, 1963	Apr. 18, 1966
June 5, 1966	28th	5	Dec. 1, 1966	Mar. 12, 1970
Apr. 29, 1970	29th	...	June 9, 1970	...

22.—Twenty-sixth Ministry of Quebec, as at June 9, 1970

(Party standing at latest General Election, Apr. 29, 1970: 72 Liberal, 17 Union Nationale, 12 Social Credit, 7 Parti Québecois.)

Office	Name	Date of Present Appointment
Prime Minister, President of the Executive Council and Minister of Finance	ROBERT BOURASSA	May 12, 1970
Minister of Tourism, Game and Fish	Mme CLAIRE KIRKLAND-CASGRAIN	May 12, 1970
Minister of Health and Minister of Family and Social Welfare	CLAUDE CASTONGUAY	May 12, 1970
Minister of Justice and Minister of Financial Institutions, Companies and Co-operatives	JÉRÔME CHOQUETTE	May 12, 1970
Minister of Cultural Affairs	FRANÇOIS CLOUTIER	May 12, 1970
Minister of Lands and Forests	THOMAS KEVIN DRUMMOND	May 12, 1970
Minister of the Public Service	RAYMOND GARNEAU	May 12, 1970
Minister of Communications	JEAN-PAUL L'ALLIER	May 12, 1970
Minister of Labour and Manpower and Minister of Immigration	PIERRE LAPORTE	May 12, 1970
Minister of Industry and Commerce and Minister of Intergovernmental Affairs	GÉRARD-D. LEVESQUE	May 12, 1970
Minister of Natural Resources	J.-GILLES MASSÉ	May 12, 1970
Minister of Highways	BERNARD PINARD	May 12, 1970
Minister of Education	GUY SAINT-PIERRE	May 12, 1970
Minister of Municipal Affairs and Minister of Public Works	MAURICE TESSIER	May 12, 1970
Minister of Revenue	WILLIAM TETLEY	May 12, 1970
Minister of Agriculture and Colonization	NORMAND TOUPIN	May 12, 1970
Minister of Transport	GEORGES E. TREMBLAY	May 12, 1970
Members of the Administration:		
Without Portfolio	VICTOR CHARLES GOLDBLOOM	May 12, 1970
Family and Social Welfare	GÉRALD HARVEY	May 12, 1970
Without Portfolio	OSWALD PARENT	May 12, 1970
Health	ROBERT QUENNEVILLE	May 12, 1970
Industry and Commerce	CLAUDE SIMARD	May 12, 1970

Each member of the National Assembly receives a sessional indemnity of $12,000 and an expense allowance of $6,000. In addition to this indemnity and allowance, the Prime Minister receives an annual salary of $16,000, a representation allowance of $4,000 and a housing allowance of $2,000; members of the Cabinet receive an annual allowance of $12,000 and a supplement of $3,000 in the form of representation allowance. Ministers without Portfolio receive an annual indemnity of $10,000 with a representation allowance of $3,000. The Chief Whip and Parliamentary Assistants receive an annual indemnity of $3,000 and a representation allowance of $1,000. The Speaker of the National Assembly receives an indemnity of $10,000, a representation allowance of $2,000 and a housing allowance of $1,000; the Deputy Speaker receives an indemnity of $5,000 and a representation allowance of $1,000. The Leader of the Opposition receives an indemnity of $10,000, a representation allowance of $3,000 and a housing allowance of $2,000.

Subsection 6.—Ontario

The Government of Ontario consists of a Lieutenant-Governor, an Executive Council and a House of Assembly. Lieutenant-Governors from Confederation (1867) to 1959 are cited in the 1960 Year Book, p. 112; since that date the position has been held by the Hon. Justice John Keiller Mackay, appointed effective Dec. 30, 1957, followed by the Hon. William Earl Rowe, appointed effective May 1, 1963, and the Hon. W. Ross Macdonald appointed effective July 4, 1968.

The House of Assembly, the single-chamber Legislature of the province, is composed of 117 members elected for a statutory term of five years. Prime Ministers from Confederation to 1959 are listed in the 1960 Year Book, p. 112; the Hon. John Parmenter Robarts became Ontario's Prime Minister on Nov. 8, 1961 upon the resignation of the Hon. Leslie M. Frost, Prime Minister from May 4, 1949.

Besides the regular departments of government, the Niagara Parks Commission, the Ontario Municipal Board, The Hydro-Electric Power Commission of Ontario, the Ontario-St. Lawrence Development Commission, the Ontario Northland Transportation Commission, the Liquor Control Board, the Liquor Licence Board, the Hospital Services Commission and The Water Resources Commission are in operation.

23.—Legislatures of Ontario, 1955-70, as at May 1, 1970

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 79; for 1924-34 in the 193 edition, p. 114; and for 1935-50 in the 1963-64 edition, p. 87.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
Nov. 22, 1951	24th	5	Feb. 21, 1952	May 2, 1955
June 9, 1955	25th	5	Sept. 8, 1955	May 4, 1959
June 11, 1959	26th	4	Jan. 26, 1960	Aug. 16, 1963
Sept. 25, 1963	27th	5	Oct. 29, 1963	Sept. 5, 1967
Oct. 17, 1967	28th	[1]	Feb. 14, 1968	[1]

[1] Life of Legislature not expired at May 1, 1970.

Under the provisions of the Legislative Assembly Act (RSO 1960, c. 208 as amended) each member of the Assembly is paid an annual indemnity of $12,000 and an allowance for expenses at the rate of $6,000. In addition, the Speaker receives a special indemnity at the annual rate of $5,000; the Chairman of the Committee of the Whole a special indemnity at the annual rate of $4,000; and the Leader of the Opposition a salary of $15,000 per annum in addition to his indemnity as a member. Each member of the Cabinet having charge of a department receives the ordinary indemnity as a member of the Legislature in addition to his salary as a Minister of the Crown. The salary provided in the Executive Council Act for the Prime Minister is $20,000 and for a Cabinet Minister having charge of a department $15,000. By the 1956 amendment, Ministers of the Crown who are in charge of de-

rtments, the Minister of the Crown who is a member of The Hydro-Electric Power Com-ssion of Ontario, and the Leader of the Opposition receive a representation allowance of 000 per annum. Each Minister without Portfolio, other than the Minister who is a mber of The Hydro-Electric Power Commission, receives $5,000 salary and $1,000 presentation allowance per annum.

24.—Seventeenth Ministry of Ontario, as at May 1, 1970

(Party standing at latest General Election, Oct. 17, 1967: 69 Progressive Conservative, 28 Liberal and 20 New Democratic Party.)

NOTE.—Ministers are shown at date of original appointment as a Minister and at date of appointment to present folio, despite the formation of a new Ministry consequent upon the appointment of a new Prime Minister.

Office	Name	Date of First Appointment	Date of Present Appointment
me Minister and President of the Council	Hon. JOHN P. ROBARTS	Dec. 22, 1958	Nov. 8, 1961
nister of Social and Family Services	Hon. JOHN YAREMKO	Apr. 28, 1958	Nov. 24, 1966
nister of Correctional Services	Hon. ALLAN GROSSMAN	Nov. 21, 1960	Aug. 14, 1963
nister of Agriculture and Food	Hon. WM. A. STEWART	Nov. 21, 1960	Nov. 8, 1961
easurer of Ontario and Minister of Economics	Hon. CHARLES MACNAUGHTON	Nov. 8, 1961	Oct. 10, 1968
nister of Transport	Hon. IRWIN HASKETT	Nov. 8, 1961	Aug. 14, 1963
nister of Tourism and Information	Hon. JAMES A. C. AULD	Oct. 25, 1962	Aug. 14, 1963
nister of Education and Minister of University Affairs	Hon. WILLIAM G. DAVIS	Oct. 25, 1962	May 14, 1964
nister of Public Works	Hon. J. R. SIMONETT	Oct. 25, 1962	June 5, 1969
nister of Trade and Development	Hon. STANLEY J. RANDALL	Nov. 8, 1963	Nov. 8, 1963
nister of Justice and Attorney General	Hon. ARTHUR A. WISHART	Mar. 26, 1964	Mar. 26, 1964
nister of Highways	Hon. GEORGE E. GOMME	Jan. 12, 1965	Nov. 24, 1966
nister of Lands and Forests	Hon. RENE BRUNELLE	Nov. 24, 1966	Nov. 24, 1966
nister of Labour	Hon. DALTON A. BALES	Nov. 24, 1966	Nov. 24, 1966
ovincial Secretary and Minister of Citizenship	Hon. ROBERT WELCH	Nov. 24, 1966	Nov. 24, 1966
nister of Health	Hon. THOMAS L. WELLS	Nov. 24, 1966	Aug. 13, 1969
nister of Municipal Affairs	Hon. W. DARCY MCKEOUGH	Nov. 24, 1966	Nov. 23, 1967
nister without Portfolio	Hon. FERN GUINDON	Nov. 23, 1967	Nov. 23, 1967
nister of Mines	Hon. ALLAN F. LAWRENCE	Feb. 13, 1968	Feb. 13, 1968
nister of Revenue	Hon. JOHN WHITE	Oct. 10, 1968	Oct. 10, 1968
nister of Energy and Resources Management	Hon. GEORGE A. KERR	June 5, 1969	June 5, 1969
nister of Financial and Commercial Affairs	Hon. BERT LAWRENCE	Aug. 13, 1969	Feb. 5, 1970

Subsection 7.—Manitoba

In addition to a Lieutenant-Governor, Manitoba has an Executive Council at present mposed of 13 members and a Legislative Assembly of 57 members elected for a statutory rm of five years. Lieutenant-Governors from Confederation (1870) to 1959 are cited in e 1960 Year Book, p. 113; since that date, the position has been held by the Hon. Errick Willis, sworn in on Jan. 15, 1960, followed by the Hon. Richard S. Bowles, sworn in on pt. 1, 1965.* Premiers since Confederation are listed in the 1960 Year Book, p. 114; the on. Dufferin Roblin, who became Premier on June 30, 1958, remained in office until ov. 27, 1967, was succeeded by the Hon. Walter Weir who remained in office until July 15, 69, when the present Premier assumed office.

The Premier of the province is paid a salary of $16,600 per annum and each of the her members of the Cabinet $15,600. Members of the Legislature are each paid a ssional indemnity of $4,800 and a tax-free expense allowance of $2,400 plus an allowance $20 a day for a period of 60 days continuous sitting including Saturdays and Sundays r members outside Metro Winnipeg who have to take board and lodging in Winnipeg ring legislative sessions. The Leader of the Opposition is paid $15,600 and the Speaker the Legislature receives $9,600, which is an amount equal to double the indemnity of individual member.

* Retirement of the Hon. Mr. Bowles was announced in July 1970; William John McKeag was named as his successor, to take office in September 1970.

25.—Legislatures of Manitoba, 1955-70, as at May 1, 1970

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 80; for 1924-36 in the 19 edition, p. 115; and for 1937-49 in the 1963-64 edition, p. 88.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
June 8, 1953	24th	5	Feb. 2, 1954	Apr. 30, 19
June 16, 1958	25th	2	Oct. 23, 1958	Mar. 31, 19
May 14, 1959	26th	5	June 9, 1959	Nov. 9, 19
Dec. 14, 1962	27th	5	Feb. 28, 1963	May 18, 19
June 23, 1966	28th	3	Dec. 5, 1966	May 22, 19
June 25, 1969	29th	[1]	Aug. 14, 1969	[1]

[1] Life of Legislature not expired at May 1, 1970.

26.—Sixteenth Ministry of Manitoba, as at May 1, 1970

(Party standing at latest General Election, June 25, 1969: 28 New Democratic Party, 22 Progressive Conservative, 4 Liberal, 1 Social Credit, 1 Liberal Democrat and 1 Independent.)

Office	Name	Date of First Appointment	Date of Present Appointmen
Premier, President of the Council, Minister of Dominion-Provincial Relations and Minister charged with the administration of the Manitoba Development Authority Act	Hon. EDWARD SCHREYER	July 15, 1969	July 15, 19
Minister of Finance	Hon. SAUL CHERNIACK	July 15, 1969	July 15, 19
Minister of Labour and Minister of Government Services	Hon. RUSSELL PAULLEY	July 15, 1969	July 15, 19
Attorney-General and Minister of Consumer and Corporate Affairs	Hon. A. H. MACKLING	July 15, 1969	July 15, 19
Minister of Mines and Natural Resources and Northern Commissioner	Hon. SIDNEY GREEN	July 15, 1969	Dec. 18, 19
Minister of Agriculture	Hon. SAMUEL USKIW	July 15, 1969	July 15, 19
Minister of Cultural Affairs	Hon. PHILIP PETURSSON	July 15, 1969	July 15, 19
Minister of Youth and Education	Hon. SAUL MILLER	July 15, 1969	July 15, 19
Minister of Health and Social Services	Hon. RENÉ TOUPIN	July 15, 1969	Dec. 18, 19
Minister of Industry and Commerce	Hon. LEONARD EVANS	July 15, 1969	Dec. 18, 19
Minister of Tourism and Recreation	Hon. PETER BURTNIAK	July 15, 1969	July 15, 19
Minister of Transportation	Hon. JOE BOROWSKI	July 15, 1969	July 15, 19
Minister of Municipal Affairs	Hon. HOWARD PAWLEY	July 15, 1969	July 15, 19

Subsection 8.—Saskatchewan

The Government of Saskatchewan consists of a Lieutenant-Governor, an Executi Council and a Legislative Assembly. Lieutenant-Governors from Confederation (190 to 1959 are cited in the 1960 Year Book, p. 115; since that date the office has been held the Hon. F. L. Bastedo, commissioned to office Jan. 27, 1958, the Hon. Robert L. Hanbidg commissioned to office Mar. 1, 1963, and the Hon. Stephen Worobetz, commissioned office Feb. 3, 1970.

The statutory number of members of the Legislative Assembly is 59, elected for maximum term of five years. Premiers from Confed ration to 1959 are listed in the 19 Year Book, p. 115; the Hon. W. S. Lloyd became Premier in 1961 and the Hon. W. Rc Thatcher in 1964.

The Premier receives $18,500 and each Cabinet Minister $13,500 annually in additi to a sessional indemnity. The Leader of the Opposition receives $13,500 plus an offi allowance of $17,500 per annum, the Speaker $4,500 and the Deputy Speaker $2,500. T sessional indemnity of a member of the Legislature is $6,000 together with an expen

owance of $3,000. Each of the members for the three northernmost constituencies of nce Albert East–Cumberland, Athabasca and Meadow Lake receives a $6,000 sessional emnity and a $3,500 expense allowance.

27.—Legislatures of Saskatchewan, 1955-70, as at May 1, 1970

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 81; for 1924-34 in the 1938 ion, p. 116; and for 1935-48 in the 1963-64 edition, p. 89.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
e 11, 1952	12th	4	Feb. 12, 1953	Apr. 25, 1956
e 20, 1956	13th	4	Feb. 14, 1957	May 4, 1960
e 8, 1960	14th	6	Oct. 11, 1960	Mar. 18, 1964
r. 22, 1964	15th	4	Feb. 4, 1965	Apr. 1, 1967
t. 11, 1967	16th	[1]	Feb. 15, 1968	[1]

[1] Life of Legislature not expired at May 1, 1970.

28.—Tenth Ministry of Saskatchewan, as at May 1, 1970

(Party standing at latest General Election, Oct. 11, 1967: 35 Liberal and 24 New Democratic Party.)

Office	Name	Date of Appointment
mier, President of the Executive Council and Minister of Industry and Commerce	Hon. W. Ross THATCHER	May 22, 1964 Dec. 28, 1967
vincial Treasurer	Hon. D. G. STEUART	Dec. 28, 1967
orney General and Provincial Secretary	Hon. D. V. HEALD	May 22, 1964
ister of Mineral Resources and Minister of Telephones	Hon. A. C. CAMERON	May 22, 1964 Dec. 13, 1965
ister of Public Health	Hon. G. B. GRANT	Oct. 18, 1966
ister of Highways and Transportation	Hon. D. BOLDT	Oct. 18, 1966
ister of Agriculture	Hon. D. T. MCFARLANE	July 5, 1965
ister of Labour and Minister of Co-operation and Co-operative Development	Hon. L. P. CODERRE	May 22, 1964
ister of Education	Hon. J. C. MCISAAC	Nov. 3, 1967
ister of Welfare	Hon. C. P. MACDONALD	Oct. 18, 1966
ister of Public Works	Hon. A. R. GUY	Nov. 3, 1967
ister of Municipal Affairs and Minister of Indian and Metis Affairs	Hon. C. L. B. ESTEY	Nov. 3, 1967 June 3, 1969
ister of Natural Resources	Hon. J. Ross BARRIE	Dec. 28, 1967

Subsection 9.—Alberta

The Government of Alberta is composed of a Lieutenant-Governor, an Executive uncil and a Legislative Assembly. Lieutenant-Governors from Confederation (1905) 1959 are listed in the 1960 Year Book, p. 116; since that date the office has been held by Hon. J. Percy Page, commissioned to office Dec. 19, 1959, followed by the Hon. J. W. ant MacEwan, commissioned in January 1966.

There are 65 members in the Legislative Assembly, elected for a maximum period of e years. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 117; Hon. Ernest C. Manning, the Premier at that time, resigned in 1968.

Each member of the Legislative Assembly (except the Speaker, the Deputy Speaker d the Leader of the Opposition) receives a sessional indemnity of $4,800 plus $2,400 pense allowance plus $15 for each day during the session when the member is necessarily sent from his ordinary place of residence, both tax-free. The Speaker's sessional in- mnity is $8,000 plus $4,000 expense allowance, the Deputy Speaker's sessional indemnity

is $6,400 plus $3,200 expense allowance, and the Leader of the Opposition's session indemnity is $7,200 plus $3,600 expense allowance. Each also receives $15 for each da during the session when he is necessarily absent from his ordinary place of residence. T Premier, in addition to the sessional indemnity, receives $18,000 and each of the oth Ministers receives $15,000.

29.—Legislatures of Alberta, 1955-70, as at May 1, 1970

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 82; for 1924-34 in the 19 edition, p. 117; and for 1935-48 in the 1963-64 edition, p. 90.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
Aug. 5, 1952	12th	3	Feb. 19, 1953	May 12, 19
June 29, 1955	13th	5	Aug. 17, 1955	May 9, 19
June 18, 1959	14th	5	Feb. 11, 1960	May 9, 19
June 17, 1963	15th	5	Feb. 13, 1964	Apr. 14, 19
May 23, 1967	16th	[1]	Feb. 15, 1968	[1]

[1] Life of Legislature not expired at May 1, 1970.

30.—Ninth Ministry of Alberta, as at May 1, 1970

(Party standing at latest General Election, May 23, 1967: 55 Social Credit, 6 Progressive Conservative, 3 Libe and 1 Independent.)

Office	Name	Date of First Appointment	Date of Present Appointme
Premier and President of Council	Hon. HARRY E. STROM	Oct. 15, 1962	Dec. 12, 19
Minister of Highways and Transport	Hon. GORDON E. TAYLOR	Dec. 27, 1950	Dec. 12, 19
Provincial Treasurer	Hon. ANDERS O. AALBORG	Sept. 9, 1952	Dec. 12, 19
Minister of Municipal Affairs	Hon. FREDERICK C. COLBORNE	Aug. 2, 1955	May 27, 19
Minister of Mines and Minerals	Hon. A. RUSSELL PATRICK	Aug. 2, 1955	Dec. 12, 19
Minister of Labour and Telephones	Hon. RAYMOND REIERSON	Aug. 2, 1955	Dec. 12, 19
Minister of Lands and Forests	Hon. J. D. ROSS	Sept. 18, 1957	May 27, 19
Provincial Secretary	Hon. AMBROSE HOLOWACH	Oct. 15, 1962	Dec. 12, 19
Minister without Portfolio	Hon. ETHEL S. WILSON	Nov. 30, 1962	Dec. 12, 19
Minister of Agriculture	Hon. HENRY A. RUSTE	Feb. 16, 1965	Dec. 12, 19
Minister without Portfolio	Hon. ADOLPH O. FIMRITE	July 4, 1966	Dec. 12, 19
Minister of Education and Youth	Hon. ROBERT C. CLARK	July 4, 1966	Dec. 12, 19
Attorney General	Hon. EDGAR H. GERHART	June 29, 1967	Dec. 12, 19
Minister of Social Development	Hon. RAYMOND A. SPEAKER	June 29, 1967	Dec. 12, 19
Minister of Health	Hon. JAMES D. HENDERSON	May 27, 1969	May 27, 19
Minister of Public Works	Hon. ALBERT W. LUDWIG	May 27, 1969	May 27, 19
Minister of Industry and Tourism	Hon. RAYMOND S. RATZLAFF	May 27, 1969	May 27, 19

Subsection 10.—British Columbia

The Government of British Columbia has a Lieutenant-Governor, an Execut Council and a Legislative Assembly. Lieutenant-Governors from Confederation (18 to 1959 are cited in the 1960 Year Book, p. 118; since that date the position has been h by Maj. Gen. the Hon. George Randolph Pearkes, commissioned to office Oct. 12, 19 followed by Col. the Hon. J. R. Nicholson, commissioned to office on July 2, 1968.

The Legislative Assembly, elected for a statutory term of five years, has 55 membe Premiers from Confederation to 1959 are cited in the 1960 Year Book, p. 118; the pres Premier assumed office in 1952.

Each member of the Executive Council and the Legislative Assembly receives sessional allowance of $5,000 and $2,500 for expenses. There is also paid to each mem a living allowance of $2,000 (based on a per diem rate of $50, not exceeding 40 days) a

ch member receives an allowance of 25 cents per mile of the distance between his place residence and the city of Victoria, reckoning such distance, going and coming, according the nearest mail route. Each member also receives an allowance of $500 for telegraph d telephone expenses. In addition, the Premier receives a salary of $23,000, each member of the Executive Council with a portfolio receives $20,000 annually and each member the Executive Council without portfolio receives $6,500. The Leader of the Opposition ceives a special allowance of $9,000 for expenses, the Speaker receives a special allowance $9,000 and the Deputy Speaker a special allowance of $3,500.

31.—Legislatures of British Columbia, 1955-70, as at May 1, 1970

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 83; for 1924-37 in the 1938 ition, p. 118; and for 1938-52 in the 1963-64 edition, p. 91.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
une 9, 1953	24th	4	Sept. 15, 1953	Aug. 13, 1956
ept. 19, 1956	25th	4	Feb. 7, 1957	Aug. 3, 1960
ept. 12, 1960	26th	4	Jan. 26, 1961	Aug. 21, 1963
ept. 30, 1963	27th	3	Jan. 23, 1964	Aug. 5, 1966
ept. 12, 1966	28th	3	Jan. 24, 1967	July 21, 1969
ug. 23, 1969	29th	[1]	Jan. 22, 1970	[1]

[1] Life of Legislature not expired at May 1, 1970.

32.—Twenty-ninth Ministry of British Columbia, as at May 1, 1970

(Party standing at latest General Election, Aug. 27, 1969: 38 Social Credit, 12 New Democratic Party and 5 Liberal.)

Office	Name	Date of First Appointment	Date of Present Appointment
remier, President of the Council and Minister of Finance	Hon. WILLIAM ANDREW CECIL BENNETT	Aug. 1, 1952	Aug. 1, 1952 Feb. 15, 1954
rovincial Secretary and Minister of Highways	Hon. WESLEY DREWETT BLACK	Aug. 1, 1952	Aug. 1, 1952 Apr. 25, 1968
ttorney-General and Minister of Labour	Hon. LESLIE RAYMOND PETERSON	Sept. 27, 1956	Nov. 28, 1960 May 27, 1968
inister of Lands, Forests, and Water Resources	Hon. RAY GILLIS WILLISTON	Apr. 14, 1954	Mar. 30, 1962
inister of Agriculture	Hon. CYRIL MORLEY SHELFORD	May 27, 1968	May 27, 1968
inister of Mines and Petroleum Resources and Minister of Commercial Transport	Hon. FRANCIS XAVIER RICHTER	Nov. 28, 1960	May 27, 1968 May 27, 1968
inister of Industrial Development, Trade, and Commerce	Hon. WALDO MCTAVISH SKILLINGS	Apr. 25, 1968	Apr. 25, 1968
inister of Education	Hon. DONALD LESLIE BROTHERS	Mar. 20, 1964	May 27, 1968
inister of Municipal Affairs	Hon. DANIEL ROBERT JOHN CAMPBELL	Mar. 20, 1964	Mar. 20, 1964
inister of Health Services and Hospital Insurance	Hon. RALPH RAYMOND LOFFMARK	Mar. 20, 1964	Apr. 25, 1968
inister of Public Works	Hon. WILLIAM NEELANDS CHANT	Mar. 15, 1955	Mar. 15, 1955
inister of Recreation and Conservation and Minister of Travel Industry	Hon. WILLIAM KENNETH KIERNAN	Aug. 1, 1952	Mar. 20, 1964 Mar. 23, 1967
inister of Rehabilitation and Social Improvement	Hon. PHILIP ARTHUR GAGLARDI	Aug. 1, 1952	Oct. 27, 1969
ember of the Executive Council without Portfolio	Hon. ISABEL PEARL DAWSON	Dec. 12, 1966	Dec. 12, 1966
ember of the Executive Council without Portfolio	Hon. PATRICIA JANE JORDAN	Dec. 12, 1966	Dec. 12, 1966
ember of the Executive Council without Portfolio	Hon. GRACE MCCARTHY	Dec. 12, 1966	Dec. 12, 1966

Subsection 11.—Yukon Territory and Northwest Territories

Yukon Territory*

The Yukon was established as a separate territory in 1898 to meet a need for local government created by the influx of miners during the gold-rush period. The Yukon Territory Act provided for a Commissioner and a Council of not more than six, all appointed by the Governor in Council. The Commissioner in Council was given legislative powers comparable to those held by the Lieutenant-Governor and the Legislative Assembly of the Northwest Territories. By 1902, five elected councillors had been added and in 1908 a fully elected Council of ten members was introduced. A population decline following the end of the gold rush was accelerated by enlistment during World War I and in 1919 the Council was reduced to three elected members. This remained the level of government until after World War II when population and economic activity again showed an increase beginning with the building of the Alaska Highway. In 1960, the Council was increased to seven elected members and provision was made for the appointment of an Advisory Committee on Finance.

Basic Legislation.—A principal feature of territorial government is its very close constitutional and working relationship with the Government of Canada. Although the provinces and the Federal Government each has jurisdiction and powers allocated by the British North America Act, the authority of the Territorial Government is allocated only by federal legislation. The Yukon Act prescribes the structure of the executive, legislative and judicial branches of the Territorial Government and the scope of their authority; all residual matters remain under federal control. The Territory has fully representative but not responsible government. Under authority of the Act, Whitehorse, the single large community in the Territory, was designated as the seat of government in 1953.

The Government Organization Act, 1966, which describes the responsibilities of the Department of Indian Affairs and Northern Development for the development of Northern Canada, is the other piece of basic legislation under which the Territorial Government operates. The Minister is responsible for the management of the natural resources (except game) and for the development of the North generally. Although he shares authority with the Governor in Council for directing the Commissioner in his duties, he is the effective link between the Territorial and Federal Governments.

The Executive.—The executive side of the Territorial Government is headed by a Commissioner appointed by the Federal Government. He is directed to administer the Government of the Territory under instruction from the Governor in Council or the Minister of Indian Affairs and Northern Development. In practice, the Commissioner is much more responsive to the wishes of his elected Council than the Yukon Act implies and he cannot spend any territorial funds which have not been voted by Council. There is also a growing body of other territorial legislation (Ordinances) on which the Commissioner is required to obtain Council approval for specific actions; actually, he never acts on any major issue without consulting Council.

Because the Commissioner does not sit with Council, there is no formal integration of the executive and legislative functions of government at Council sessions. In 1960, an amendment to the Yukon Act was designed to bridge this gap by providing for the formation of an Advisory Committee on Finance. The Committee consists of three members of Council appointed by the Commissioner on the advice of Council, with whom the Commissioner is required to consult in the preparation of his estimates of expenditures and appropriations. By its own choice, Council has made membership on the Committee rotational by replacing one member each year. A more recent development to fuse the executive and legislative functions of government was announced by the federal Minister of Indian Affairs and Northern Development in late 1969. The Minister proposed the

* Revised under the direction of the Commissioner of the Yukon Territory, Whitehorse.

rmation of an Executive Committee to be composed of the Commissioner as chairman, is two Assistant Commissioners as appointed members and two members of Council ppointed by the Commissioner on the advice of Council. It is intended, moreover, that he two Council members of the Committee will also be members of the Advisory Committee n Finance, leaving a third member to be appointed by Council in the usual manner. hese changes are to take place if approved by the new Council when it assumes office the autumn of 1970.

Below the Commissioner's office, the Territorial Public Service is organized into ight conventional administrative departments under the direction of the Commissioner; ll are located in Whitehorse. Territorial Government administration is represented in utlying communities by a limited number of territorial agents who are concerned mainly ith the sale of liquor and licences but most territorial services are administered from Whitehorse. Health facilities are administered mainly by the federal Department of Health and Welfare. Federal involvement in the operation of health services in the Territory stems from its responsibility for Indians and from practical administrative onsiderations. All schools are under the direction of the Territorial Department of Educaion with headquarters in Whitehorse. The Territorial Government has well-developed ngineering and welfare services. The Territorial Public Service numbers about 900 persons, ncluding some 250 school teachers and vocational school instructors.

Some administrative areas such as natural resources, which are the responsibility of he Department of Indian Affairs and Northern Development, are administered by federal ublic servants. The Commissioner, in addition to his territorial role, is also the Departnent's senior federal representative in the Territory. Because the Minister of Justice is he Attorney General of the Territory for purposes of the Criminal Code of Canada, the dministration of justice in the Territory is still provided, at direct federal expense, by the Department of Justice and the Royal Canadian Mounted Police. Recent amendments to he Yukon Act provide for the administration of justice to be transferred from the Federal Government to the Territorial Government. Moreover, in a manner similar to arrangements made with provincial governments, the Territorial Government will in future egotiate its own police contract with the Royal Canadian Mounted Police. The Attorney General of Canada, however, will remain Attorney General of the Yukon Territory. The court system is described on p. 106.

The Legislature.—The Legislative Council consists of seven members elected for a erm of three years. Three of the members represent electoral districts located in or close o Whitehorse where about half of the some 15,000 residents of the Territory live. As in many other matters, a federal agency (Chief Electoral Officer) conducts the territorial elections as a free service to the Territory. Council normally meets in session twice each year. The first session commences in March and has as a major part of its work the voting of the main territorial estimates which have been prepared by the Commissioner and agreed o by its Advisory Committee on Finance and the Minister. The second session is usually called in November and special sessions can be held at any time. Main sessions last from one to two months and the debates are recorded verbatim and published under the title of Votes and Proceedings. The Commissioner calls Council into session and prorogues it; he sits with it only by invitation to explain or defend a proposed expenditure, draft legislation or policy papers which he has placed before Council. All sessions are presided over by a Speaker who is appointed by Council from among its members for the duration of each Council but is given no specific responsibilities or authority under the Yukon Act. In practice, he conducts Council proceedings under Rules of Council which are an adaptation of Canadian parliamentary procedures. A Clerk of Council controls the administrative side of its proceedings.

The matters on which Council can legislate are not significantly fewer than those enjoyed by the provinces. The main exceptions concern natural resources. These are a responsibility of the Federal Government which has to provide the heavy investments in

transportation and other facilities needed to bring them into production. Most major policy matters are first placed before Council in the form of a Sessional Paper prepared by the Commissioner, and the draft legislation is then presented at the next session in the form of a Bill, although amendments to existing legislation may be processed concurrently with the Sessional Paper or without the assistance of this background information. Discussion is conducted usually with the Council resolved into Committee of the Whole when the Commissioner, heads of departments and outside specialists appear to give detailed information and advice on the subject concerned. Bills are given three readings and require the assent of the Commissioner before they become law as Ordinances of the Territory. The Commissioner can reserve assent to legislation but rarely does so. As with provincial legislation, the Federal Government may disallow any Ordinance but within a period of one year. New Ordinances are published after each session; Consolidated Ordinances of the Yukon Territory are usually revised every ten years.

The Role of the Federal Government.—Direct federal involvement in the affairs of the Territorial Government extends from control of its constitution to responsibility for the operation of certain provincial-type services and for providing most of its finances. The constitutional arrangement has been described, as have some of the federally operated provincial-type services, e.g., justice and law enforcement and the health services. Beyond these special services, the Federal Government provides the usual range of national services such as the operation of Canadian Broadcasting Corporation radio stations, mail delivery and mainline airports. Full assistance under all national welfare programs is available in the Territory. Even with special financial assistance in many particular areas, the low volume of local revenues falls far short of meeting the high cost of services provided by the Territorial Government. The Federal Government picks up this financial deficit through annual fiscal arrangements known as Federal-Territorial Financial Agreements. The amount of federal financial assistance given to the Territorial Government is simply the difference between the forecast of revenues available to the Territorial Government and the forecast of the cost of a reasonable level of services to be provided by that Government. In the process, the Territorial Government forgoes its authority to tax private and corporate incomes and to collect other corporation taxes and succession duties.

Setting aside special accounts such as housing loans and amortization of borrowings from the Federal Government for which individual arrangements are made, the Yukon Government in the year ended Mar. 31, 1970, spent an estimated $13,500,000 on operational account and another $7,400,000 on capital account. Of the total expenditure estimated at $20,900,000, the Territorial Government raised about $4,700,000 locally and recovered another $3,500,000 from the Federal Government via shared-cost programs. The remainder was provided by the Federal Government under its financial agreement with the Territory.

COMMISSIONER, COUNCIL AND COUNCIL STAFF OF THE YUKON TERRITORY
(as at August 1970)

Commissioner	J. Smith
Assistant Commissioner (Executive)	R. A. Hodgkinson
Members of the Council—	
Carmacks-Kluane	J. O. Livesey
Dawson	G. O. Shaw
Mayo	Mrs. G. J. Gordon
Watson Lake	D. E. Taylor
Whitehorse East	N. S. Chamberlist
Whitehorse North	J. K. McKinnon
Whitehorse South	J. F. Dumas
Officers of the Council—	
Territorial Secretary and Clerk of the Council	H. J. Taylor
Legal Adviser	P. O'Donoghue

Yellowknife is the seat of government of the Northwest Territories. Since 1963, operational responsibility for government services, most of which were previously administered by the Federal Government at Ottawa, has been transferred gradually to Territorial control.

orthwest Territories*

The Temporary Government Act of 1869 was the first legislation by the Federal overnment to establish government in the newly acquired Rupert's Land and North-estern Territory. However, functional territorial government really dates from the orth-West Territories Act of 1875. The creation of the Provinces of Saskatchewan and lberta in 1905 and the adjustment of the northern boundaries of the Provinces of Manitoba, ntario and Quebec by 1912 pushed the Territories north of the 60th parallel. The 1905 gislation provided for a federally appointed Commissioner with wide executive and legis-tive powers and a Council of four but no Councillors were appointed for 16 years. In)21 the Council was expanded to six members and, until 1946 when the first territorial sident was appointed, it was comprised entirely of senior federal officials.

Defence early warning systems, radio and greatly improved air transportation after Vorld War II ended the extreme isolation of the North and pressures for improved ter-itorial government soon followed. Legislative changes in 1951 and 1952 increased Council nembership to eight, three of them elected from the Mackenzie District. A fourth was dded in 1954. At least two Council sessions were required to be held in a year; one in the Territories and all others at the seat of government in Ottawa. The subjects on which he Commissioner in Council could legislate were increased to approximate those of the rovincial legislatures except that natural resources (other than game) were reserved to he Federal Government. A Territorial Court was established.

Recent Constitutional Developments.—The quickening of federal interest in the Vorth in the 1950s and 1960s stimulated concern and effort to arrange for a resident terri-orial government and to chart the course of its future development. An amendment to the Vorthwest Territories Act in 1966 created three new electoral districts in the Eastern

* Revised by the Commissioner of the Northwest Territories, Yellowknife.

Arctic and, for the first time, gave elected representation to all residents of the Territories. Also, at the ensuing election the first Eskimo was elected to the Territorial Council. A separate consolidated revenue fund was set up for the Territorial Government and wider powers in other areas of financial administration were introduced.

Meanwhile, in 1965, the Federal Government had appointed an Advisory Commission on the Development of Government in the Northwest Territories which travelled widely in the North to examine into the local needs for change. Following receipt of its recommendations in 1966, the Federal Government acted quickly to provide for a territorial administration resident in the Territories. Yellowknife was designated as the seat of territorial government. In June 1970, the Federal Government passed amendments to the Northwest Territories Act which increased the number of elected Council members from seven to 10 and decreased the number of appointed members from five to four. The amendments also extended the life of Council from three to four years; permitted Council to set its own indemnities and to establish the voting age in Territorial elections; and reduced the period of federal disallowance of Territorial Ordinances from two years to one.

Changes in Territorial Administration.—Unlike the Yukon Territory which has had its own public service since the turn of the century, the Government of the Northwest Territories, until recently, has been largely dependent upon the Federal Government for staff to implement its legislation and to operate its public services. Until 1963, the Deputy Minister of Northern Affairs (now Indian Affairs and Northern Development) was Commissioner, and the Northern Administration Branch of that Department was devoted to operating most government services in the Northwest Territories with federal public servants. In that year, a full-time Commissioner was appointed and charged with building up a territorial administration located initially in Ottawa but to move into the Territories as soon as possible and in September 1967 the Commissioner and his staff of about 50 persons moved to Yellowknife and immediately assumed responsibility for the operation of the liquor system (already staffed by territorial contract employees), for the game management service, for municipal affairs and for the issuing of all licences and the collecting of taxes. Operational responsibility for other government services was transferred from federal to territorial control in the Mackenzie District on Apr. 1, 1969, and in the Eastern Arctic on Apr. 1, 1970. The Territorial Government is structured to carry out its administration through seven line and three service departments, each under the direction of a senior public servant reporting to the Executive which consists of the Commissioner, the Deputy Commissioner and the Assistant Commissioner. The field staff is organized into four regions with Regional Directors at Fort Smith, Inuvik, Frobisher Bay and Churchill.

Present Government Structure.—The Northwest Territories Act, 1952, as amended provides for an executive, legislative and judicial structure. The Commissioner is the chief executive officer. He is appointed by the Federal Government and is responsible for the administration of the Territories under the direction of the Minister of Indian Affairs and Northern Development. In practice, all major policy decisions are taken on the advice of this Council. The Commissioner can spend funds only to the extent voted by Council and all new revenue measures are subject to the approval of Council. Normally, the Commissioner obtains prior federal approval of proposed legislative and budgetary measures before submitting them to Council. A Deputy Commissioner is the effective head of the territorial administration.

The Legislative Council of 10 elected and four appointed members has a life of four years. It meets at least twice a year, usually for a period of three weeks, but more often if required. The Commissioner presides over Council in Session and the Deputy Com-

nissioner sits as an appointed member. A Clerk of Council and a Legal Adviser provide he main administrative assistance and debates are recorded verbatim.

The Northwest Territories Act gives the Territorial Council authority to legislate in ost "provincial" areas of government activity except for natural resources (other than ame); these are reserved to the Federal Government which alone can provide the necessary evelopment funds. Council is conducted under rules which are an adaptation of federal arliamentary procedure. Legislation (Ordinances) must receive three readings and have he assent of the Commissioner; he can reserve assent but this is a rare occurrence and he Federal Government may disallow any ordinance within one year. The Commissioner proposes most legislation but private members' Bills are allowed except for money atters which are the prerogative of the Commissioner. Besides draft legislation, the ouncil gives considerable time to policy papers in which the Commissioner asks for advice seeks authority to take a particular course of action.

The court system of the Northwest Territories is described on p. 106.

Continuing Federal Responsibility.—The Government Organization Act, 1966 harges the Minister of Indian Affairs and Northern Development with responsibility for he development of the North and for the general co-ordination of federal activities in the rea. His responsibilities for the Territorial Government through the Northwest Territories Act have been described as has the operation of government services by the staff of is Department. Other Federal Government agencies, such as the Northern Health ervice of the Department of National Health and Welfare and the Royal Canadian Mounted Police, are responsible for health and police services with the Territorial Government sharing their costs. The Ministry of Transport operates mainline airports throughut the whole of the North and the Canadian Broadcasting Corporation provides special hortwave northern broadcasts and maintains a growing number of local stations in the Territories. Federal cost-shared national assistance programs, within the competence of he Territorial Government, are available to it on the same conditions as to the provinces.

There are about 6,000 Indians and 10,500 Eskimos in the Northwest Territories for hom the Federal Government has a special responsibility. Although there are no Indian eserves in the Territories, two treaties were entered into which established certain claims land and certain other rights. As in the provinces, legislative authority with respect to ndians and lands reserved for Indians is vested exclusively in the Federal Government nd this authority extends to Eskimos.

Extensive financial assistance is given to the Territorial Government under special ederal-territorial agreements, usually spanning a period of five years. These agreements erve both to allocate the financial responsibility of each government for the provision f services in the Territories and to fix the amount of the federal financial payments to he Territorial Government for the life of the agreement. At the present stage of development, territorial revenues fall far short of meeting the expenditures of the Territorial overnment. Under the financial agreements, all taxes on personal and corporate incomes, orporation taxes and succession duties are reserved to the Federal Government.

Excluding amortization of borrowings, the Territorial Government, during the year nded Mar. 31, 1970, spent about $34,200,000 on operating accounts and about $9,100,000 n capital projects. Of these expenditures, approximately $4,750,000 was raised within he Territories through taxes, licences and liquor revenues and $1,200,000 was recovered rom residents of the Territories for services supplied. A further $3,000,000 was recovered nder federal shared-cost programs. The remainder was provided by the Federal Government as special operating grants and loans under the financial agreement and under the pecial arrangements relating to the move to the seat of government in Yellowknife.

COMMISSIONER, COUNCIL AND COUNCIL STAFF OF THE NORTHWEST TERRITORIES
(as at August 1970)

Commissioner	S. M. Hodgson
Deputy Commissioner	J. H. Parker
Members of the Council—	
Appointed	J. H. Parker Hugh Campbell J. Gordon Gibson John Tetlichi Lloyd Barber
Elected—	
Mackenzie Delta	L. Trimble
Mackenzie River	M. D. Fairbrother
Mackenzie South	D. M. Stewart
Mackenzie North	D. Searle
Western Arctic	D. Pryde
Central Arctic	R. G. Williamson
Eastern Arctic	Simonie
Officers of the Council—	
Clerk	W. H. Remnant
Legal Adviser	F. G. Smith

Section 3.—Local Government*

Local government in Canada comprises all government entities created by the pro inces and territories to provide services which can be more effectively discharged throu control at the local level. Broadly speaking, local government provides police and fi protection, health and welfare services, parks and recreation facilities, road and stre construction and maintenance, waterworks and sewers, waste removal, etc. In additio local government, through the medium of government enterprises, may operate such faci ities as public transit and the supply of electricity and gas. The administration of educ tion is also delegated to the local level of government but is normally administered separate from the other local functions (see Chapter VII, Pt. I, Sect. 2).

Many local government organizations antedate Confederation but under the Britis North America Act local government was made a responsibility of the provincial legislature a responsibility subsequently extended to the territories when their governments we constituted in the present forms. The unit of local government, apart from the scho board, is usually the municipality which is incorporated as a city, town, village, townsh or other designation depending on the province. The powers and responsibilities of muni ipalities are those delegated to them by statutes passed by their respective provincial territorial legislatures. Some of these statutes apply to all municipalities within a pro ince, some to a certain type or group, and many to one municipality only.

Rapid and continuing urbanization during the past two decades and the demand f services in rural areas comparable to those obtainable in urban areas have placed gre strains on local government. These strains have been aggravated by the inelasticity of t major local revenue source—the taxation of real property; at the same time, the sm populations of most municipalities have hindered attempts to provide services that requi economies of scale for efficient operation.

The provinces have taken a number of steps to assist local governments to meet the challenges. An increasing number of special agencies or joint boards and commissions ha been created to provide certain services for groupings of municipalities. Local governme revenue has been supplemented by grants from the provinces, either made unconditional or for specific purposes. Certain functions traditionally assigned to local governme have been assumed in whole or in part by the provinces. Besides encouraging the ama gamation of small units, the provinces have also established new levels of local governme to provide services which can be better discharged at a regional level. The establishme

* Prepared in the Governments Division, Financial Statistics Branch, Dominion Bureau of Statistics.

the Municipality of Metropolitan Toronto in 1954 was followed by that of the Metro-
olitan Corporation of Greater Winnipeg in 1960 and, more recently, the Regional Munic-
alities of Ottawa–Carleton and Niagara. In 1967, regional districts were established
British Columbia. A very different program is under way in Newfoundland where the
attered population in the many outports is being encouraged and assisted to move to
rger and more viable settlements.

The major local revenue source available to local government is the taxation of real
roperty, supplemented in varying degrees by taxation of personal property, business and
nusement taxes, or sales taxes on specific commodities. Revenue is also derived from
ences, permits, rents, concessions, franchises, fines and surplus funds from municipal
nterprises.

Since a description of all forms of local government would be too complex for easy
mprehension, the following paragraphs describe only municipal organization in each
rovince and in the territories as at Jan. 1, 1970. The accompanying tables give the total
umber of each type of municipality in each province and territory as well as numbers
each metropolitan and major urban areas.

Newfoundland.—At Jan. 1, 1970, Newfoundland had 190 incorporated areas com-
rising two cities, 69 towns, three rural districts, 23 local improvement districts, 92 local
overnment communities and one metropolitan area. The towns, rural districts and local
nprovement districts operate under the Local Government Act; towns and rural districts
ave elected councils and local improvement districts have appointed trustees. Local
overnment communities are established under the Community Councils Act in the smaller
ettlements and have limited powers and functions. The St. John's Metropolitan Area,
corporated under a special Act, covers the area adjoining and surrounding the city of
t. John's and the town of Mount Pearl and is similar in organization to a local improve-
ent district. There are no rural municipalities in the usual sense. Only about one fifth
f 1 p.c. of the total area is municipally organized. Municipalities are supervised by the
epartment of Municipal Affairs and Housing.

Prince Edward Island.—In this province, one city and seven towns have been in-
rporated under special Acts and 24 villages have been established under the Village
ervices Act. There is no municipal organization for the remainder of the province,
lthough it is divided into three counties which are subdivided into school sections having
lected school boards. The organized municipalities are administered by the Department
f Municipal Affairs.

Nova Scotia.—This province is geographically divided into 18 counties; 12 of these
nstitute separate municipalities and the remaining six are divided into two districts or
unicipalities, making a total of 24 rural municipalities. In addition, there are three cities
perating under special charters and special legislation and 39 towns operating under the
own Incorporation Act. Although geographically located within counties or districts,
ties and towns are entirely independent of them except as to joint expenditures. There is
o part of the province that is not municipally organized. Supervision of municipalities
exercised through the Department of Municipal Affairs.

New Brunswick.—In 1967, the New Brunswick Government assumed direct re-
onsibility for justice, health, welfare and education and fully reorganized the municipal
ystem. The municipal organization is now comprised of six cities, 21 towns and 93 villages.
he remainder of the province is not municipally organized and is administered by the
rovincial government. There are 160 unincorporated local service districts established
o provide services that are municipal in nature but these are administered by the Depart-
ent of Municipal Affairs and are not municipal organizations. Municipalities are super-
ised by the Department of Municipal Affairs.

Quebec.—The more thickly settled areas of Quebec, comprising about one third o the area of the province, are municipally organized; the remainder is governed by th province as "territories". The organized area is divided into 74 county municipalitie which look after matters of general interest within the county. Cities and towns ar excluded from the county system for political and administrative purposes except for certai joint expenditures. The remaining municipal corporations and the unorganized territor within counties fall under the county system. The counties have no direct powers o taxation. Funds to finance the services falling within their jurisdiction are provided b the municipalities forming part thereof. The municipalities are governed by Specia Charter, by the Cities and Towns Act or by the Municipal Code. On Jan. 1, 1970, ther were 1,635 municipalities, divided as follows: 64 cities, 195 towns, 292 villages, 520 parishes 161 townships, 13 united townships and 390 municipalities without designation. Ther have been several attempts by the province during recent years to consolidate munici palities, the most notable example being the fusion in 1965 of 14 municipalities on Île Jésu to form the city of Laval. At the beginning of 1970, the Montreal and Quebec Urba Communities and the Outaouais Regional Community were established in which integratio of services will be staged gradually. The supervision and assistance of municipalities i through the Department of Municipal Affairs and the Quebec Municipal Commission.

Ontario.—Slightly more than one tenth of Ontario's area is municipally organize (which includes 95 p.c. of its total population) and the remainder is governed entirely b the provincial government. The settled section of the province is divided into one metro politan municipality, two regional municipalities and 35 counties. In addition, there ar 33 cities, 151 towns, five boroughs, 150 villages, 551 townships and 17 improvement districts The Municipality of Metropolitan Toronto, in existence since Jan. 1, 1954, encompasse one city and five boroughs, and is responsible for assessments, police, water supply, sewerage metropolitan road systems, planning, etc. The regional municipalities of Ottawa-Carleto and Niagara have replaced the county administrations in their respective areas and assume certain responsibilities over all the municipalities within their boundaries. This new form o regional government in Ontario is also contemplated in other areas. Each county, althoug an incorporated municipality, is comprised of the towns (with the exception of six separate towns), villages and townships situated within it. Some municipalities are located outsid the counties in areas called districts. These districts are in the western and northern part of Ontario and are not municipal entities. Supervisory control of municipalities is exercise by the Department of Municipal Affairs and the Ontario Municipal Board under th Municipal Act and other Acts governing aspects of municipal government.

Manitoba.—Manitoba has one metropolitan municipality, nine cities, 36 towns 41 villages and 109 rural municipalities supervised by the Department of Municipal Affair under the Municipal Act and special charters. The Metropolitan Corporation of Greate Winnipeg has been in existence since 1960 and 12 municipalities are within its boundaries It is responsible for such services as planning, assessments, sewage disposal, water supply etc. There are 18 local government districts incorporated under the Local Governmen Districts Act where the province has placed a resident administrator to carry out the func tions of a municipal council. The unorganized areas are the direct responsibility of th provincial government.

Saskatchewan.—All municipalities in Saskatchewan derive their powers from genera Acts that are designated with the name of the type of municipality. There are 11 cities 131 towns, 360 villages and 292 rural municipalities. The area so organized consists o most of the southern part of the province, the remainder of this portion being administere by the province through nine unincorporated local improvement districts. The northern part is sparsely populated and some municipal services are provided by the province throug the operation of the Northern Administration District. Municipalities are supervised b the Department of Municipal Affairs.

33.—Number of Municipalities in Canada classified by Type and Size, by Province, as at Jan. 1, 1970

Type or Size Group	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
Type													
Regional Municipalities	—	—	—	—	74	38	1	—	—	28	—	—	141
Metropolitan Corporations	—	—	—	—	—	1	1	—	—	—	—	—	2
Regional Municipalities	—	—	—	—	—	2	—	—	—	—	—	—	2
Counties and Regional Districts	—	—	—	—	74	35	—	—	—	28	—	—	137
Unitary Municipalities	74	32	66	120	1,635	890	195	794	326	138	2	4	4,276
Cities	2	1	3	6	64	38[1]	9	11	9	31	2	1	177
Towns	72[2]	7	39	21	195	151	36	131	101	13	—	3	769
Villages	—	24	—	93	292	150	41	360	168	54	—	—	1,182
Rural Municipalities[3]	—	—	24	—	1,084	551	109	292	48	40	—	—	2,148
Quasi-Municipalities (Improvement Districts)[4]	116	—	—	—	—	17	18	9	59	—	3	3	216
Totals	190	32	66	120	1,709	945	214	803	376	166	5	7	4,633
Population Size Group (1966 Census)													
Unitary Municipalities—													
Over 100,000	—	—	1	—	3	9	1	2	2	2	—	—	20
50,000 to 99,999	1	—	2	1	7	16	1	—	—	4	—	—	32
10,000 to 49,999	2	2	16	6	72	55	10	5	9	25	—	—	202
Under 9,999	71	30	47	113	1,553	810	183	787	315	107	2	4	4,022
Totals	74	32	66	120	1,635	890	195	794	326	138	2	4	4,276

[1] Includes the five boroughs of Metropolitan Toronto. [2] Includes three rural districts. [3] Includes: municipalities in Nova Scotia; parishes, townships, united townships and municipalities in Quebec; townships in Ontario; rural municipalities in Manitoba and Saskatchewan; municipal districts and counties in Alberta; districts in British Columbia. [4] Includes: local government communities, local improvement districts and metropolitan area in Newfoundland; improvement districts in Ontario and Alberta; local government districts in Manitoba; local improvement districts in Saskatchewan and Yukon; hamlets in the Northwest Territories.

34.—Number of Municipalities in Metropolitan Areas and in Major Urban Areas, by Type, as at Jan. 1, 1970

Metropolitan or Major Urban Area[1]	Metropolitan Corporations and Regional Municipalities	Cities and Boroughs	Towns	Villages	Other	Total
Metropolitan Area—						
St. John's, Nfld.	—	1	1	—	1	3
Halifax, N.S.	—	2	—	—	1	3
Saint John, N.B.	—	1	1	7	—	9
Quebec, Que.	—	10	12	1	5	28
Montreal, Que.	—	21	32	2	6	61
Ottawa, Ont.	1	3	3	3	4	14
Toronto, Ont.	1	6	8	3	3	21
Hamilton, Ont.	—	1	3	1	7	12
Kitchener, Ont.	—	3	2	2	2	9
London, Ont.	—	1	—	—	2	3
Windsor, Ont.	—	1	1	1	2	5
Sudbury, Ont.	—	1	3	—	5	9
Winnipeg, Man.	1	7	1	—	6	15
Regina, Sask.	—	1	—	—	—	1
Saskatoon, Sask.	—	1	—	—	—	1
Edmonton, Alta.	—	1	1	—	3	5
Calgary, Alta.	—	1	—	—	—	1
Vancouver, B.C.	—	6	—	—	8	14
Victoria, B.C.	—	1	—	1	5	7
Major Urban Area—						
Sydney–Glace Bay, N.S.	—	1	5	—	—	6
Moncton, N.B.	—	1	1	3	—	5
Chicoutimi–Jonquière, Que.	—	5	1	1	—	7
Shawinigan, Que.	—	2	1	3	—	6
Trois-Rivières, Que.	—	2	1	—	1	4
Drummondville, Que.	—	1	1	—	1	3
Sherbrooke, Que.	—	1	1	—	—	2
St. Jean, Que.	—	1	2	—	1	4
St. Jérôme, Que.	—	1	1	1	—	3
Valleyfield, Que.	—	1	—	1	2	4
Kingston, Ont.	—	1	—	—	1	2
Peterborough, Ont.	—	1	—	—	—	1
Oshawa, Ont.	—	1	1	—	—	2
Welland, Ont.	—	2	—	—	—	2
Niagara Falls, Ont.	—	1	—	—	—	1
St. Catharines, Ont.	—	1	1	—	—	2
Brantford, Ont.	—	1	—	—	—	1
Brampton, Ont.	—	—	1	—	1	2
Guelph, Ont.	—	1	—	—	—	1
Sarnia, Ont.	—	1	—	1	1	3
Timmins, Ont.	—	—	1	—	3	4
Sault Ste Marie, Ont.	—	1	—	—	—	1
Thunder Bay, Ont.	—	1	—	—	—	1

[1] The boundaries of Metropolitan Areas and Major Urban Areas are as defined by the Census Division of DBS.

Alberta.—This province has an Act applying to each type of municipality and unde these Acts, the Department of Municipal Affairs supervises the nine cities, 101 towns 168 villages, 18 municipal districts and 30 counties. The counties administer schools i addition to municipal functions. There are 50 improvement districts administered directl by the Department of Municipal Affairs and two special areas under the Special Area Board also responsible to the Department of Municipal Affairs.

British Columbia.—In 1967, the Government of British Columbia instituted regiona government in the province and by Jan. 1, 1970, 28 regional districts had been established These regional districts are developing and are assuming responsibility for certain service from municipalities within their boundaries as well as providing services to previously unorganized areas. There are 31 cities, 13 towns, 54 villages and 40 districts. District are mostly rural although there are some adjacent to the principal cities of Vancouver an Victoria that are largely urban in character. Municipalities are supervised by the Depart

ent of Municipal Affairs. In addition, there are unincorporated local districts supervised y the Department of Lands, Forests, and Water Resources that have been set up to rovide certain municipal services such as protection, waterworks, irrigation, etc.

Yukon and Northwest Territories.—In the Yukon Territory, there are two cities nd three local improvement districts and in the Northwest Territories, there are one city, hree towns and three hamlets. The local improvement districts in the Yukon and the amlets in the Northwest Territories, although incorporated, are developmental forms of cal government.

Section 4.—Federal and Provincial Commissions of Inquiry or Royal Commissions

Federal Royal Commissions Established.—Royal Commissions, now generally alled Commissions of Inquiry, established up to June 30, 1967 under Part I of the Federal nquiries Act are given in previous Year Books beginning with the 1940 edition. Commissions appointed between that date and May 1, 1970, the closing date of this Chapter, re listed here. Any Commissions established between the latter date and the date of oing to press of this publication will be found in the Register of Official Appointments, hapter XXVII, Pt. III.

Commission	*Chief Commissioner or Chairman*	*Date Established*
Commission to inquire into the non-medical use of certain drugs and substances	Gerald LeDain	May 29, 1969
Commission (Prices and Incomes Commission) to inquire into the causes and consequences of inflation and suggest measures for stabilizing prices	John H. Young	June 19, 1969
Commission to consult with representatives of the Indians and study, recommend measures and advise as to claims re formal treaties and agreements	Lloyd Barber	Dec. 19, 1969
Commission to exercise and perform the powers and duties conferred on a Bilingual Districts Board by the Official Languages Act	Roger Duhamel	Feb. 12, 1970
Royal Commission to inquire into the pollution of Canadian waters by oil escaping from the tanker *Arrow* following its grounding in Chedabucto Bay, N.S.	Hon. Mr. Justice G. L. S. Hart	Mar. 12, 1970

Reports of Federal Royal Commissions.—Reports of Federal Royal Commissions ssued during the period Jan. 1, 1969 to May 1, 1970 were as follows:—

Report of the Royal Commission on Security (abridged), established Nov. 16, 1966. Ottawa, 1969. 159 p. $2. (Cat. No. Z1-1966/5).

Report of the Royal Commission on Pilotage, established Nov. 1, 1962:
Part III, Study of Canadian pilotage: Atlantic Provinces. Ottawa, 1969. 684 p. $5. (Cat. No. Z1-1962/2-3).

Report of the Royal Commission on Bilingualism and Biculturalism, established July 19, 1963:
Book 3A.—Work world. Part 1: Socio-economic status. Part 2: Federal administration. Ottawa, 1969. 440 p. $5. (Cat. No. Z1-1963/1-5/3A.)
Book 3B.—Work world. Part 3: Private sector. Part 4: Conclusions. Ottawa, 1969, pp. 445-576. $2. (Cat. No. Z1-1963/1-5/3B).

Report of the Royal Commission on Farm Machinery, established May 26, 1966:
Special report on prices of tractors and combines in Canada and other countries. Ottawa, 1969. 239 p. $2.50. (Cat. No. Z1-1966/4-1-1).

Provincial Royal Commissions.—The following provincial Royal Commission were established during the period Dec. 31, 1968 and May 1, 1970:—

Province and Nature of Commission	*Chief Commissioner or Chairman*	*Date Established*
NEWFOUNDLAND		
Labour	MAXWELL COHEN	1969
NOVA SCOTIA		
*To inquire into the cost of election campaigns	M. G. GREEN	July 23, 1968
*To inquire into Halifax County Hospital at Cole Harbour	H. P. MACKEEN	July 23, 1968
*To inquire into the Nova Scotia Housing Commission land assembly program at Sackville	W. C. DUNLOP	Nov. 20, 1968
To inquire into the teachers' salary dispute	A. R. MOREIRA	Oct. 14, 1969
To inquire into the operations of the Bridgewater Police Department	H. B. DICKEY	Dec. 31, 1969
ONTARIO		
To inquire into and report on the relationship between the use of diazinon or other pesticides and the death of waterfowl on Toronto islands	MARTIN H. EDWARDS	Sept. 25, 1969
SASKATCHEWAN		
To inquire into misconduct of certain police officers of the City of Saskatoon Police Force	His Hon. Judge J. H. MAHER	June 23, 1969
ALBERTA		
To investigate services to single transient men, City of Edmonton	Hon. Mr. Justice M. B. O'BYRNE	Feb. 9, 1970
BRITISH COLUMBIA		
Liquor Inquiry Commission	His Hon. Judge C. W. MORROW	Jan. 31, 1969

PART III.—ADMINISTRATIVE FUNCTIONS OF THE FEDERAL GOVERNMENT

Section 1.—Financial Administration

The financial affairs of the Government of Canada are administered and controlled under the fundamental principles that no tax shall be imposed and no money shall be spent without the authority of Parliament and that expenditures shall be made only for the purposes authorized by Parliament. The most important constitutional provisions relating to Parliament's control of finances are contained in the British North America Act; this Act provides that all federal taxing and appropriating measures must originate in the House of Commons and all requests for grants must come from the Crown through responsible Ministers, and for such requests the Government is solely responsible. In practice, financial control is exercised through a budgetary system based on the principle that all the financial needs of the Government for each fiscal year be considered at one time so that both the current condition and the prospective condition of the public treasury are clearly in evidence.

* Appointed prior to Dec. 31, 1968 but omitted from list published in the 1969 Year Book.

Estimates and Appropriations.—The co-ordination of the Estimates process is arried out by the Treasury Board. This Board is a separate department of government, s Minister having the designation of President of the Treasury Board. In addition to he President, the Board consists of the Minister of Finance, and four other Privy Coun-llors. Under the Financial Administration Act, the Board may act for the Privy Council n all matters relating to financial management including estimates, expenditures, financial ommitments, establishments, revenues, accounts, terms and conditions of employment f persons in the Public Service and general administrative policy in the Public Service.

The Estimates for any one fiscal year are determined as a result of a two-phased review y the Treasury Board of departmental proposals for expenditure. In the spring of each ear, at the request of the Secretary of the Treasury Board, each department submits to he Treasury Board a forecast of expenditures for the current and following four fiscal ears. During the summer, a review of the programs giving rise to these expenditures orecasts is carried out by the Treasury Board as a result of which tentative expenditures gures are determined for each department for the coming fiscal year. The Board reviews ach departmental program submission in the light of probable revenues and governmental olicy generally, usually consulting the appropriate Minister and officials. Each depart-ient, using the figure resulting from this review as a guideline, develops in detail its man-ower and other resource requirements and submits them to the Treasury Board late in ctober in the form of Main Estimates for the fiscal year beginning the following Apr. 1. hese Estimates are analysed by the Treasury Board staff and compared with the guide-nes determined during the spring program review. The Board reviews each departmental ubmission in the light of the current budgetary outlook. The Estimates may be rejected r reduced and unresolved differences of opinion may be referred to the Cabinet for decision. hen the Board is satisfied with their substance and form, the Main Estimates are sub-itted to the Cabinet and later to the Governor in Council for approval and are then laid efore the House of Commons.

On the motion of the President of the Privy Council, the Estimates of each department re initially referred for consideration to the appropriate standing committee of the House n or before Mar. 1. Under the Standing Orders, the House is deemed to have reported y May 31. The Government House Leader must give 48 hours notice of a motion for he House to concur in the Estimates that have been considered by the committee. The onsideration of the Estimates usually extends over a period of several months and, under he Standing Orders, the Speaker is required to put every question necessary to dispose of ny item of business relating to supply not later than the last sitting day in the period nding June 30 of each year. Each vote is the subject of a separate resolution and Members f the House may question the Minister on any item but no private Member or Minister n his own responsibility can introduce any new expenditure proposal or any amendment o an Estimates item that would result in an increased expenditure. When the examination f the individual items has been completed, a resolution approving the granting of moneys s referred to a committee of the whole House. When such resolutions are passed, an ppropriation Bill is introduced which, when approved by the House of Commons and the enate, is given Royal Assent and becomes law. Grants in the Appropriation Acts are rants to the Crown and funds cannot be disbursed until the supply voted by Parliament o the Crown is released by a warrant prepared on an Order of the Governor in Council and igned by the Governor General.

As weeks or months may elapse after the commencement of the fiscal year before the ain Appropriation Act is passed, funds are made available for the conduct of govern-ent functions by the passage of an interim supply Bill granting one or more twelfths of he total of each item in the Estimates. Additional interim supply Bills may be introduced required, awaiting Parliament's detailed consideration of the Estimates. In addition, o cover any new and unforeseen requirements that might arise during the year, Supple-ientary Estimates may be introduced and just prior to the end of the fiscal year further upplementary Estimates are laid before the House. These Supplementary Estimates re dealt with in the same manner as the Main Estimates.

In addition to the expenditure items included in the annual Appropriation Acts there are a number of items, such as interest on the public debt, family allowances and old age assistance payments, which have been authorized under the provisions of other statutes. Although it is not necessary for Parliament to pass annually on these items they are included in the Main Estimates for purposes of information. Statutory provision also exists for the expenditure of public money in emergencies where no parliamentary appropriation is available. Under the Financial Administration Act, the Governor in Council, upon the report of the President of the Treasury Board that there is no appropriation for the expenditure and upon the report of the appropriate Minister that the expenditure is urgently required, may order the issuance of a special warrant authorizing disbursement of the amount required. Such warrants may be issued only when Parliament is not in session and every warrant must be published in the *Canada Gazette* within thirty days of issue and reported to Parliament within fifteen days of assembly. The Fire Losses Replacement Account Act also provides for emergency expenditures for the urgent repair or replacement of property destroyed or damaged by fire, where there is not sufficient money available in the appropriation for the service suffering loss. Such amounts must be charged subsequently to an appropriation or included in the Estimates for the department or agency concerned.

In addition, disbursements are made for purposes not reflected in the budgetary accounts but recorded in the Government's statement of assets and liabilities, such as loans to and investments in Crown corporations, loans to international organizations and to national, provincial and municipal governments, and loans to veterans. There are also disbursements in connection with deposit and trust accounts and annuity, insurance and pension accounts which the Government holds or administers, including the old age security fund and the Canada Pension Plan fund which are operated as separate entities. Although these disbursements are excluded from the calculation of the annual budgetary surplus or deficit, they are all subject to appropriation by Parliament either in the annual Appropriation Acts or in other legislation.

The Budget.—Some time after the Main Estimates have been introduced, the Minister of Finance presents his annual Budget Speech in the House of Commons. Budget papers, tabled for the information of Parliament at least one day prior to the presentation of the Budget, include a general review of economic conditions and a preliminary review of the Government's accounts for the fiscal year then ending. The Budget Speech itself reviews the state of the national economy and the financial operations of the Government for the previous fiscal year and gives a forecast of the probable financial requirements for the year ahead, taking into account the Main Estimates and making allowances for Supplementary Estimates and probable lapsings. At the close of his address, the Minister tables the formal resolutions for changes in the existing tax rates and customs tariff which, in accordance with parliamentary procedure, must precede the introduction of any money Bills. These resolutions give notice of the amendments which the Government intends to ask Parliament to make in the taxation statutes. However, if a change is proposed in a commodity tax, such as a sales tax or excise duty on a particular item, it is usually made effective immediately; the legislation, when passed, is made retroactive to the date of the Speech.

The Budget Speech is delivered in support of a motion that the House go into committee, the debate on which may take up six sitting days. With the passage of the motion the way is clear for the consideration of the Budget resolutions and, when these have been approved by the Committee, a report to this effect is made to the House and the tax Bills are introduced and thereafter dealt with in the same manner as all other government financial legislation.

Revenues and Expenditures.—The administrative procedures whereby revenues are collected and expenditures made are, for the most part, contained in the Financial Administration Act.

With respect to revenues, the basic requirement is that all public money shall be paid into the Consolidated Revenue Fund, which is defined as the aggregate of all public money in deposit to the credit of the Receiver General. (Under the Government Organization Act, 1969, the Minister of Supply and Services is the Receiver General of Canada.) The Treasury Board has prescribed detailed regulations governing the receipt and deposit of such money. For the actual custody of public money, use is made of the Bank of Canada and the chartered banks. Balances are allocated to the various chartered banks on the basis of a percentage allocation established by agreement among all the banks and communicated to the Department of Finance by the Canadian Bankers' Association. The daily operating account is maintained with the Bank of Canada and the division of funds between it and the chartered banks takes into account the immediate cash requirements of the Government and consideration of monetary policy. The Minister of Finance may purchase and hold securities of, or guaranteed by, Canada and pay for them out of the Consolidated Revenue Fund or may sell such securities and pay the proceeds into the Fund. Thus, if cash balances in the Fund are in excess of requirements for the immediate future they may be invested in interest-earning assets. In addition, the Minister of Finance has established a purchase fund to assist in the orderly retirement of the public debt.

The Treasury Board exercises central control over the budgets, programs and staffs of departments and over financial and administrative matters generally. Although the most important part of this control function is exercised during the annual consideration of departmental long-range plans and the Estimates, the Board has the right to maintain continuous control over certain types of expenditure to ensure that the scale of activities and commitments for the future is held within approved policies, that departments follow uniform, efficient and economical practices, and that the Government is informed of and approves any major development of policy or significant transaction that might give rise to public or parliamentary criticism.

To ensure that the decisions of Parliament, the Government and Ministers in regard to expenditures are enforced, the Financial Administration Act provides that no payment shall be made out of the Consolidated Revenue Fund without the authority of Parliament and no charge shall be made against an appropriation except upon the requisition of the appropriate Minister or a person authorized by him in writing. These requisitions, and certificates that the work has been performed, the material supplied or the services rendered and that the price charged is reasonable or according to contract, together with such documents as may be required, are presented to the Receiver General, who makes the payment.

At the beginning of each fiscal year, or at such other times as the Treasury Board may direct, each department, unless otherwise directed by the Board, submits a division into allotments of each vote included in its Estimates. Once approved by the Board, these allotments cannot be varied or amended without the approval of the Board and expenditures charged to appropriations are limited to such allotments. To avoid over-expenditures within a fiscal year, commitments coming in course of payment within the year for which Parliament has provided or has been asked to provide appropriations are recorded and controlled by the departments concerned. (The Minister of Supply and Services may perform these services on behalf of departments.) Records are maintained of commitments made under contract that will fall due in succeeding years, since the Government must be prepared in future to ask Parliament for appropriations to cover them. Any unexpended amounts in the annual appropriations lapse at the end of the year for which they are granted, but for thirty days subsequent to Mar. 31 payments may be made and charged to the previous year's appropriations for debts payable prior to the end of that fiscal year.

Under the Financial Administration Act, every payment pursuant to an appropriation is made under the control and direction of the Receiver General by cheque or other instrument in such form and authenticated in such manner as the Treasury Board may direct. In practice, such cheques or instruments are cleared daily by the chartered banks through

the Bank of Canada to the Cheque Adjustment Division of the Receiver General, and reimbursement is made by means of a cheque drawn on the Receiver General's account with the Bank of Canada.

Public Debt.—In addition to the collection and disbursement of public money for budgetary and non-budgetary purposes, the Government receives and disburses substantial sums in connection with its public debt operations. The Minister of Finance is authorized to borrow money by the issue and sale of securities at such rate of interest and subject to such terms and conditions as the Governor in Council may approve. Although the specific authority of Parliament is required for new borrowings, the Financial Administration Act authorizes the Governor in Council to approve the borrowing of such sums of money as are required for the redemption of maturing or called securities and, to ensure that the Consolidated Revenue Fund will be sufficient to meet lawfully authorized disbursements, he may also approve the temporary borrowing of such sums as are necessary for periods not exceeding six months. The Bank of Canada acts as the fiscal agent of the Government in the management of the public debt.

Accounts and Financial Statements.—Under the Financial Administration Act and subject to regulations of the Treasury Board, the Receiver General requires accounts to be kept to show the revenues of Canada, the expenditures made under each appropriation, the other payments into and out of the Consolidated Revenue Fund, and such of the assets and direct and contingent liabilities as the Minister of Finance believes are required to give a true and fair view of the financial position of Canada. The statement of assets and liabilities is designed to disclose the amount of the net debt, which is determined by offsetting against the gross liabilities only those assets regarded currently as readily realizable or interest- or revenue-producing. Fixed capital assets, such as government buildings and public works, are charged to budgetary expenditures at the time of acquisition or construction and are shown on the statement of assets and liabilities at a nominal value of $1.

Annually, on or before Dec. 31 or, if Parliament is not then sitting, within any of the first fifteen days next thereafter that Parliament is sitting, the *Public Accounts*, prepared by the Receiver General, is laid before the House of Commons by the Minister of Finance. The *Public Accounts* contains a survey of the financial transactions of the fiscal year ended the previous Mar. 31, statements of the revenues and expenditures for that year and of the assets and direct and contingent liabilities as at the end of that year, together with such other accounts and information as are necessary to show the financial transactions and financial position of Canada or which are required by law to be reported in the *Public Accounts*. Monthly financial statements are also published in the *Canada Gazette*.

The Auditor General.—The Government's accounts are subject to an independent examination by the Auditor General who is an officer of Parliament. With respect to expenditures, this examination is a post-audit for the purposes of reporting whether the accounts have been faithfully and properly kept and whether the money has been expended for the purposes for which it was appropriated by Parliament and the expenditures have been made as authorized; any audit before payment is the responsibility of the department or agency requisitioning the payment. With respect to revenues, the Auditor General is required to ascertain that all public money is fully accounted for and that the rules and procedures applied are sufficient to ensure an effective check on the assessment, collection and proper allocation of the revenue. With respect to public property, he is required to satisfy himself that essential records are maintained and that the rules and procedures applied are sufficient to safeguard and control such property. The Auditor General reports to Parliament the results of his examination, calling attention to any case which he considers should be brought to the notice of the House. He also reports to Ministers, the Treasury Board or the Government any matter which in his opinion calls for attention so that remedial action may be taken promptly.

Public Accounts Committee.—It is the usual practice to refer the *Public Accounts* nd the *Auditor General's Report* to the Public Accounts Committee of the House of Com- ons, which may review them and report the findings and recommendations to the House Commons.

Section 2.—Departments, Boards, Commissions, etc.*

This Section indicates the functions of the various departments and the special boards nd commissions conducting the work of the Government. Although it is not possible, ving to limitations of space, to include the details of each service or the divisions or sections all departments, in general the main branches are given along with services that differ some quality from the larger class of subjects handled. The work of many of the depart- ents and agencies is given in detail in later Chapters of this volume; the Index will be eful in locating required information.

As mentioned in Section 1, the Public Service is under almost continual change in sponse to the growth in number, variety and complexity of the services required of the overnment. In 1966, a major reorganization took place, partly to achieve a functional tionalization of existing activities and partly because new activities had to be undertaken. hese changes, reflected in the Government Organization Act (SC 1966, c. 25), are outlined iefly in the 1967 Year Book, pp. 83-84.

Shortly after the passage of that Act, it became apparent that further major changes ould be required. Thus, the Department of Industry was amalgamated with the Depart- ent of Trade and Commerce to facilitate, among other things, the co-ordination of the overnment's policies and services to business in respect of such matters as industrial evelopment and international marketing.

The establishment of a Department of Regional Economic Expansion continued the ttempts to bring under the direction of a single Minister the key programs required to educe regional economic disparities. The trend began in 1966 with the establishment of he Department of Forestry and Rural Development from elements of the previous Depart- ent of Forestry and elements of the Department of Agriculture, and was continued with he establishment of the Department of Regional Economic Expansion, whose responsi- ilities include the Area Development Agency (formerly of the Department of Industry) nd the Experimental Projects Branch (formerly of the Department of Manpower and mmigration). In addition, the Atlantic Development Board was replaced by the Atlantic evelopment Council, a body designed to take over the main general functions of the Board ut with expanded authority to examine and advise the Minister on the whole range of tlantic development programs and policies.

The Department of Fisheries and Forestry was created by the amalgamation of the epartment of Fisheries with the Forestry Branch of the former Department of Forestry nd Rural Development, thereby bringing under the direction of a single Minister respon- ibility for the development of two of Canada's major renewable resources.

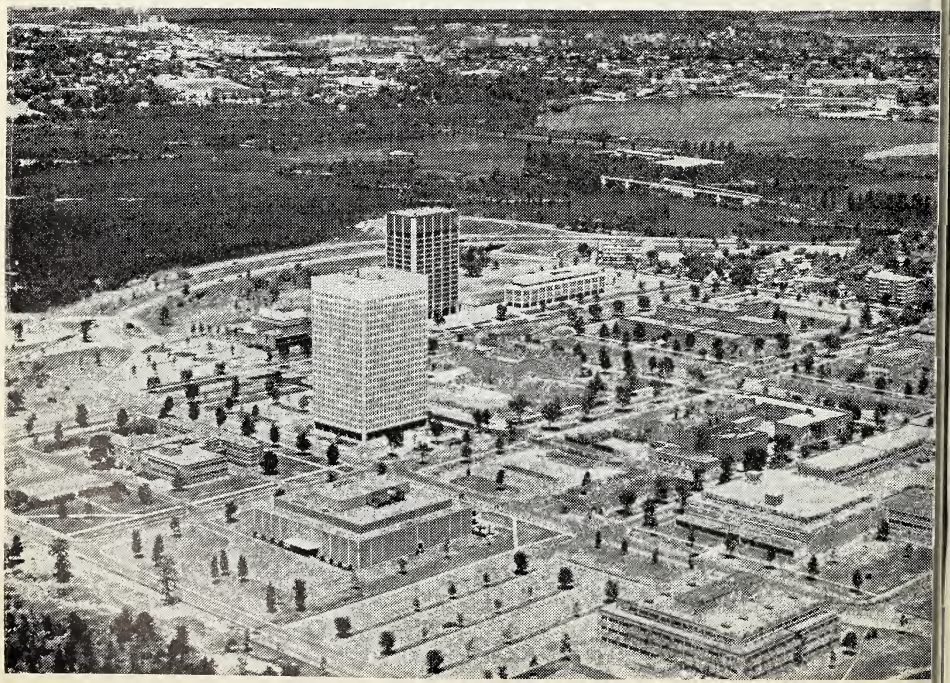
The creation of the Department of Communications reflects the importance of the evelopment of communications in Canada. Its core was formed from a major portion of he Telecommunications Branch of the Department of Transport and from the Defence esearch Telecommunications Establishment of the Defence Research Board. The inister of Communications was also made Postmaster General, thereby extending the readth of his responsibilities for most aspects of communications policy.

A new Department of Supply and Services brought together under the direction of a ingle Minister the major procurement and services functions of the Government, a con- olidation designed to achieve major economies through central purchasing. Operating epartments may now concentrate on their functional responsibilities without having to

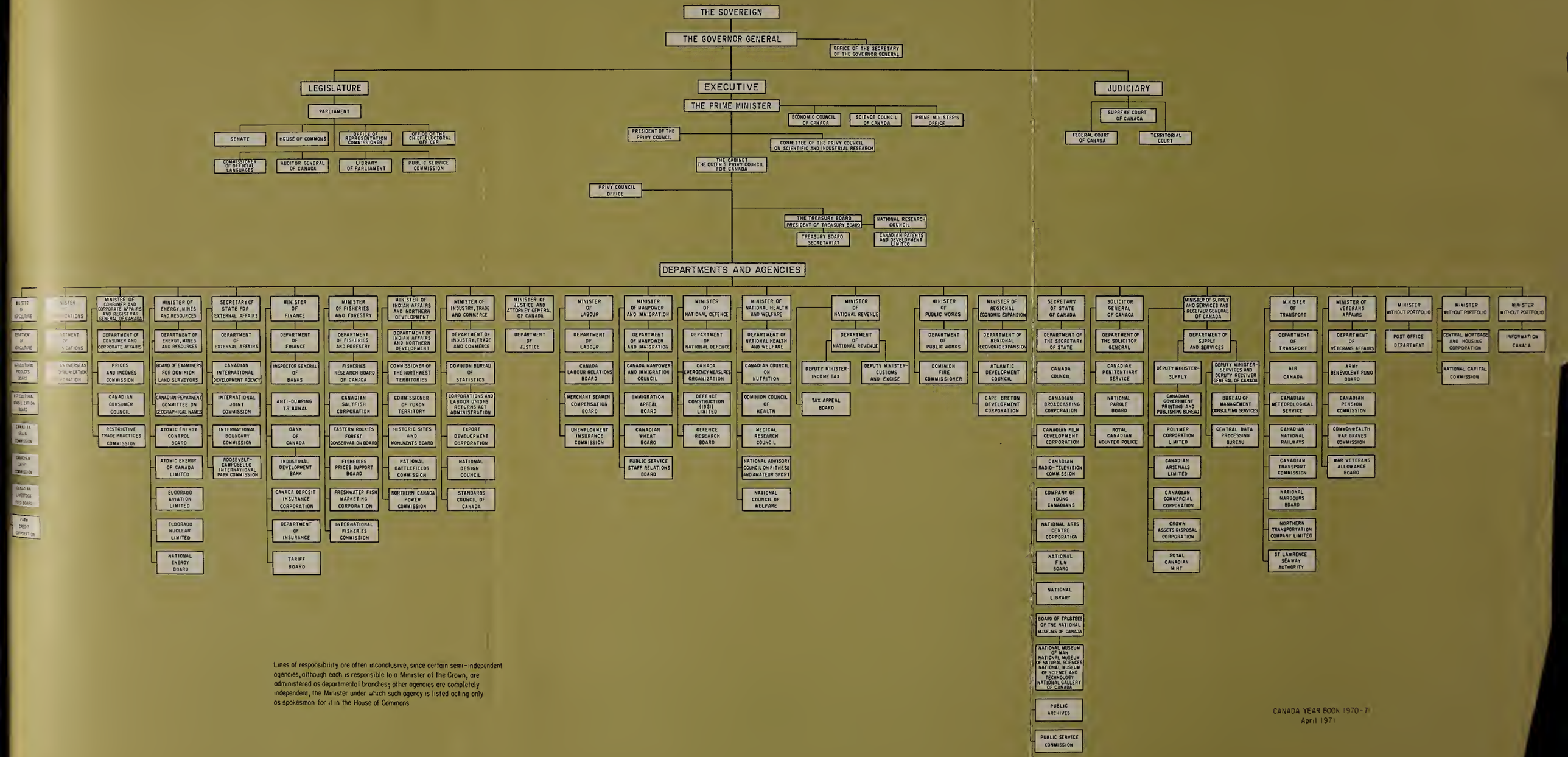
* As at May 1, 1970; any major changes taking place between that date and the time of going to press will be rried in an Appendix to this volume. Also, the accompanying organization chart is brought up to the latest possible ate before going to press; see lower right-hand corner.

The Centre Block of Canada's Parliament Buildings. It is here, in the legislative chambers, that the principles of democratic government are upheld—that policies submitted on matters of national concern are discussed, studied and, if approved by a majority of the people's representatives, become part of the law of the land.

Federal Government buildings at Tunney's Pasture, about two miles west of Parliament Hill, house a number of departments and agencies. This and other areas have gradually developed as government administrative services have been located throughout the National Capital area.



THE GOVERNMENT OF CANADA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PARLIAMENT
SENATE
HOUSE OF COMMONS
OFFICE OF REPRESENTATION COMMISSIONER
OFFICE OF THE CHIEF ELECTORAL OFFICER
COMMISSIONER OF OFFICIAL LANGUAGES
AUDITOR GENERAL OF CANADA
LIBRARY OF PARLIAMENT
PUBLIC SERVICE COMMISSION
EXECUTIVE
THE PRIME MINISTER
ECONOMIC COUNCIL OF CANADA
SCIENCE COUNCIL OF CANADA
PRIME MINISTER'S OFFICE
PRESIDENT OF THE PRIVY COUNCIL
COMMITTEE OF THE PRIVY COUNCIL ON SCIENTIFIC AND INDUSTRIAL RESEARCH
THE CABINET
THE QUEEN'S PRIVY COUNCIL FOR CANADA
PRIVY COUNCIL OFFICE
THE TREASURY BOARD
PRESIDENT OF TREASURY BOARD
TREASURY BOARD SECRETARIAT
NATIONAL RESEARCH COUNCIL
CANADIAN PATENTS AND DEVELOPMENT LIMITED
JUDICIARY
SUPREME COURT OF CANADA
FEDERAL COURT OF CANADA
TERRITORIAL COURT
DEPARTMENTS AND AGENCIES
MINISTER OF AGRICULTURE
DEPARTMENT OF AGRICULTURE
AGRICULTURAL PRODUCTS BOARD
AGRICULTURAL STABILIZATION BOARD
CANADIAN GRAIN COMMISSION
CANADIAN DAIRY COMMISSION
CANADIAN LIVESTOCK FEED BOARD
FARM CREDIT CORPORATION
MINISTER OF COMMUNICATIONS
DEPARTMENT OF COMMUNICATIONS
CANADIAN OVERSEAS TELECOMMUNICATION CORPORATION
MINISTER OF CONSUMER AND CORPORATE AFFAIRS AND REGISTRAR GENERAL OF CANADA
DEPARTMENT OF CONSUMER AND CORPORATE AFFAIRS
PRICES AND INCOMES COMMISSION
CANADIAN CONSUMER COUNCIL
RESTRICTIVE TRADE PRACTICES COMMISSION
MINISTER OF ENERGY, MINES AND RESOURCES
DEPARTMENT OF ENERGY, MINES AND RESOURCES
BOARD OF EXAMINERS FOR DOMINION LAND SURVEYORS
CANADIAN PERMANENT COMMITTEE ON GEOGRAPHICAL NAMES
ATOMIC ENERGY CONTROL BOARD
ATOMIC ENERGY OF CANADA LIMITED
ELDORADO AVIATION LIMITED
ELDORADO NUCLEAR LIMITED
NATIONAL ENERGY BOARD
SECRETARY OF STATE FOR EXTERNAL AFFAIRS
DEPARTMENT OF EXTERNAL AFFAIRS
CANADIAN INTERNATIONAL DEVELOPMENT AGENCY
INTERNATIONAL JOINT COMMISSION
INTERNATIONAL BOUNDARY COMMISSION
ROOSEVELT-CAMPOBELLO INTERNATIONAL PARK COMMISSION
MINISTER OF FINANCE
DEPARTMENT OF FINANCE
INSPECTOR GENERAL OF BANKS
ANTI-DUMPING TRIBUNAL
BANK OF CANADA
INDUSTRIAL DEVELOPMENT BANK
CANADA DEPOSIT INSURANCE CORPORATION
DEPARTMENT OF INSURANCE
TARIFF BOARD
MINISTER OF FISHERIES AND FORESTRY
DEPARTMENT OF FISHERIES AND FORESTRY
FISHERIES RESEARCH BOARD OF CANADA
CANADIAN SALTFISH CORPORATION
EASTERN ROCKIES FOREST CONSERVATION BOARD
FISHERIES PRICES SUPPORT BOARD
FRESHWATER FISH MARKETING CORPORATION
INTERNATIONAL FISHERIES COMMISSION
MINISTER OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
COMMISSIONER OF THE NORTHWEST TERRITORIES
COMMISSIONER OF YUKON TERRITORY
HISTORIC SITES AND MONUMENTS BOARD
NATIONAL BATTLEFIELDS COMMISSION
NORTHERN CANADA POWER COMMISSION
MINISTER OF INDUSTRY, TRADE AND COMMERCE
DEPARTMENT OF INDUSTRY, TRADE AND COMMERCE
DOMINION BUREAU OF STATISTICS
CORPORATIONS AND LABOUR UNIONS RETURNS ACT ADMINISTRATION
EXPORT DEVELOPMENT CORPORATION
NATIONAL DESIGN COUNCIL
STANDARDS COUNCIL OF CANADA
MINISTER OF JUSTICE AND ATTORNEY GENERAL OF CANADA
DEPARTMENT OF JUSTICE
MINISTER OF LABOUR
DEPARTMENT OF LABOUR
CANADA LABOUR RELATIONS BOARD
MERCHANT SEAMEN COMPENSATION BOARD
UNEMPLOYMENT INSURANCE COMMISSION
MINISTER OF MANPOWER AND IMMIGRATION
DEPARTMENT OF MANPOWER AND IMMIGRATION
CANADA MANPOWER AND IMMIGRATION COUNCIL
IMMIGRATION APPEAL BOARD
CANADIAN WHEAT BOARD
PUBLIC SERVICE STAFF RELATIONS BOARD
MINISTER OF NATIONAL DEFENCE
DEPARTMENT OF NATIONAL DEFENCE
CANADA EMERGENCY MEASURES ORGANIZATION
DEFENCE CONSTRUCTION (1951) LIMITED
DEFENCE RESEARCH BOARD
MINISTER OF NATIONAL HEALTH AND WELFARE
DEPARTMENT OF NATIONAL HEALTH AND WELFARE
CANADIAN COUNCIL ON NUTRITION
DOMINION COUNCIL OF HEALTH
MEDICAL RESEARCH COUNCIL
NATIONAL ADVISORY COUNCIL ON FITNESS AND AMATEUR SPORT
NATIONAL COUNCIL OF WELFARE
MINISTER OF NATIONAL REVENUE
DEPARTMENT OF NATIONAL REVENUE
DEPUTY MINISTER-INCOME TAX
DEPUTY MINISTER-CUSTOMS AND EXCISE
TAX APPEAL BOARD
MINISTER OF PUBLIC WORKS
DEPARTMENT OF PUBLIC WORKS
DOMINION FIRE COMMISSIONER
MINISTER OF REGIONAL ECONOMIC EXPANSION
DEPARTMENT OF REGIONAL ECONOMIC EXPANSION
ATLANTIC DEVELOPMENT COUNCIL
CAPE BRETON DEVELOPMENT CORPORATION
SECRETARY OF STATE OF CANADA
DEPARTMENT OF THE SECRETARY OF STATE
CANADA COUNCIL
CANADIAN BROADCASTING CORPORATION
CANADIAN FILM DEVELOPMENT CORPORATION
CANADIAN RADIO-TELEVISION COMMISSION
COMPANY OF YOUNG CANADIANS
NATIONAL ARTS CENTRE CORPORATION
NATIONAL FILM BOARD
NATIONAL LIBRARY
BOARD OF TRUSTEES OF THE NATIONAL MUSEUMS OF CANADA
NATIONAL MUSEUM OF MAN
NATIONAL MUSEUM OF NATURAL SCIENCES
NATIONAL MUSEUM OF SCIENCE AND TECHNOLOGY
NATIONAL GALLERY OF CANADA
PUBLIC ARCHIVES
PUBLIC SERVICE COMMISSION
SOLICITOR GENERAL OF CANADA
DEPARTMENT OF THE SOLICITOR GENERAL
CANADIAN PENITENTIARY SERVICE
NATIONAL PAROLE BOARD
ROYAL CANADIAN MOUNTED POLICE
MINISTER OF SUPPLY AND SERVICES AND RECEIVER GENERAL OF CANADA
DEPARTMENT OF SUPPLY AND SERVICES
DEPUTY MINISTER-SUPPLY
CANADIAN GOVERNMENT PRINTING AND PUBLISHING BUREAU
POLYMER CORPORATION LIMITED
CANADIAN ARSENALS LIMITED
CANADIAN COMMERCIAL CORPORATION
CROWN ASSETS DISPOSAL CORPORATION
ROYAL CANADIAN MINT
DEPUTY MINISTER-SERVICES AND DEPUTY RECEIVER GENERAL OF CANADA
BUREAU OF MANAGEMENT CONSULTING SERVICES
CENTRAL DATA PROCESSING BUREAU
MINISTER OF TRANSPORT
DEPARTMENT OF TRANSPORT
AIR CANADA
CANADIAN METEOROLOGICAL SERVICE
CANADIAN NATIONAL RAILWAYS
CANADIAN TRANSPORT COMMISSION
NATIONAL HARBOURS BOARD
NORTHERN TRANSPORTATION COMPANY LIMITED
ST LAWRENCE SEAWAY AUTHORITY
MINISTER OF VETERANS AFFAIRS
DEPARTMENT OF VETERANS AFFAIRS
ARMY BENEVOLENT FUND BOARD
CANADIAN PENSION COMMISSION
COMMONWEALTH WAR GRAVES COMMISSION
WAR VETERANS ALLOWANCE BOARD
MINISTER WITHOUT PORTFOLIO
POST OFFICE DEPARTMENT
MINISTER WITHOUT PORTFOLIO
CENTRAL MORTGAGE AND HOUSING CORPORATION
NATIONAL CAPITAL COMMISSION
MINISTER WITHOUT PORTFOLIO
INFORMATION CANADA

Lines of responsibility are often inconclusive, since certain semi-independent agencies, although each is responsible to a Minister of the Crown, are administered as departmental branches; other agencies are completely independent, the Minister under which such agency is listed acting only as spokesman for it in the House of Commons

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become involved in providing major support services for themselves. The Central Data Processing Service Bureau formerly in the Treasury Board, and the Bureau of Management Consulting Services formerly in the Public Service Commission were transferred to the new Department. The Minister of Supply and Services became also the Receiver General of Canada, an office formerly held by the Minister of Finance.

In addition, there were other changes. The Medical Research Council, formerly associated with the National Research Council, now reported to Parliament through the Minister of National Health and Welfare; the National Council of Welfare was re-structured to provide more effective advice to the Minister of National Health and Welfare; the organization of the Science Council of Canada was brought more into line with that of the Economic Council of Canada and was given enhanced powers and greater independence from the Government; and the Royal Canadian Mint was made a Crown corporation to facilitate its operation on a commercial basis so that it could enter competitive coin manufacturing.

There were also changes of lesser significance. Any reorganization of the Public Service necessitates changes to the Financial Administration Act, if only to bring up to date the schedules listing all departments and agencies of the Government. The Act was also amended so that the Minister of Supply and Services would become the Receiver General of Canada, an office formerly held by the Minister of Finance. Because Members of Parliament are not, in principle, permitted to receive remuneration from the Crown beyond their parliamentary indemnity, the Salaries Act was amended to provide for the salaries of the new Ministers and, at the same time and for the same reason, the Senate and House of Commons Act was amended to make it clear that Members of Parliament could receive travelling expenses from the Government.

Department of Agriculture.—This Department was established in 1867 (SC 1868, c. 53) and undertakes work on all phases of agriculture. Research and experimentation are carried out by the Research Branch; the maintenance of standards and protection of products by the Production and Marketing Branch and the Health of Animals Branch; the Canada Grain Act, as it pertains to the inspection, weighing, storage and transportation of grain, is administered by the Board of Grain Commissioners; and farm income security and price stability are provided under the Crop Insurance Act, the Prairie Farm Assistance Act, the Canadian Dairy Commission Act, the Agricultural Stabilization Act and the Agricultural Products Board. The Agricultural Stabilization Board, the Farm Credit Corporation, the Board of Grain Commissioners, the Canadian Dairy Commission and the Canadian Livestock Feed Board report to Parliament through the Minister of Agriculture.

Anti-dumping Tribunal.—Under the Anti-dumping Act (SC 1968-69, c. 10) the Anti-dumping Tribunal is declared to be a court of record and makes formal inquiry into the impact of dumping on production in Canada. Within three months of a preliminary decision of the Deputy Minister of National Revenue, the Tribunal must make an order or finding on the question of injury, threat of injury or material retardation to production in Canada. Decisions of the Tribunal are final and conclusive. The Tribunal consists of a chairman and not more than four other members. Its offices are located in Ottawa and it may conduct hearings in other centres in Canada. The Tribunal reports to Parliament through the Minister of Finance.

Board of Grain Commissioners.—Constituted in 1912 under the Canada Grain Act (RSC 1952, c. 25), the Board of Grain Commissioners for Canada provides general supervision over the physical handling of grain in Canada by licensing elevator operators, inspecting and weighing grain received at and shipped from terminal elevators, and other services. It also manages and operates the Canadian Government Elevators system in Western Canada. The Board, comprising a chief commissioner and two commissioners, has authority to inquire into any matter relating to the grading and weighing of grain, deductions for dockage or shrinkage, deterioration of any grain during storage or treatment, unfair or discriminatory operation of a grain elevator, or any other matter which comes within the scope of the Canada Grain Act. The Board publishes its regulations in the *Canada Gazette*. It reports to Parliament through the Minister of Agriculture and routine administrative matters are handled through departmental channels.

Canadian International Development Agency.—As at Nov. 9, 1960, the operation and administration of Canada's external assistance programs became the responsibility of the External Aid Office, established by Order in Council, placing it in charge of a director general. In 1968 the name of the organization was changed to the Canadian International Development Agency (CIDA) and it was placed under the direction of a president. The Agency reports to Parliament through the Secretary of State for External Affairs.

Canadian Penitentiary Service.—The Penitentiary Service operates under the Penitentiary Act (SC 1960-61, c. 53) and is under the jurisdiction of the Solicitor General of Canada. It is responsible for all federal penitentiary institutions and for the care and training of persons sentenced or committed thereto. The Commissioner of Penitentiaries, under the direction of the Solicitor General, has control and management of the Service and all matters connected therewith.

Canadian Pension Commission.—This Commission, established in 1933 by amendment to the Pension Act (RSC 1952, c. 207), replaced the Board of Pension Commissioners, the first organization created to deal solely with war pensions for service in Canada's Armed Forces. The Commission's main function is the administration of the Pension Act under which it adjudicates upon all claims for pension in respect of disability or death arising out of service in Canada's Armed Forces; and Parts I to X inclusive of the Civilian War Pensions and Allowances Act, which provide for the payment of pensions in respect of death or disability arising out of civilian service directly related to the prosecution of World War II. It also adjudicates on claims for pension under various other measures; authorizes and pays monetary grants accompanying certain gallantry awards bestowed on members of the Armed Forces; and administers various trust funds established by private individuals for the benefit of veterans and their dependants. The Commission consists of eight to twelve commissioners and up to five *ad hoc* commissioners appointed by the Governor in Council. Its chairman has the rank of a Deputy Minister and it reports to Parliament through the Minister of Veterans Affairs.

Canadian Radio-Television Commission.—This Commission, established under the provisions of the Broadcasting Act assented to Mar. 7, 1968, is given authority to regulate and supervise all aspects of the Canadian broadcasting system. The Executive Committee, after consultation with the part-time members in attendance at a meeting of the Commission, may issue broadcasting licences or renewal licences for such terms, not exceeding five years, and subject to such conditions related to the circumstances of the licensee as the Executive Committee deems appropriate for the implementation of the broadcasting policy enunciated in Sect. 2 of the Broadcasting Act. Under the same circumstances, the Executive Committee may, upon application by a licensee, amend any conditions of a broadcasting licence issued to him. Applications for licences to establish new broadcasting undertakings, for amendments to licences, for renewal licences, or for changes in the ownership or in the share structure of licensees are filed with the Secretary, Canadian Radio-Television Commission, Ottawa, Ont. A public hearing shall be held by the Commission in connection with the issue of a broadcasting licence, other than a licence to carry on a temporary network operation or where the Commission or the Executive Committee has under consideration the revocation or suspension of a licence. A public hearing shall be held by the Commission, if the Executive Committee is satisfied that it would be in the public interest to hold such a hearing in connection with the amendment of a licence, the issue of a licence to carry on a temporary network operation or a complaint by a person with respect to any matter within the powers of the Commission. A public hearing shall be held by the Commission in connection with the renewal of a licence unless the Commission is satisfied that such a hearing is not required.

The Commission consists of five full-time members and ten part-time members. It reports to Parliament through the Secretary of State.

Canadian Transport Commission.—The Canadian Transport Commission, created in 1967 by the National Transportation Act (SC 1967, c. 69), took over powers formerly vested in the Board of Transport Commissioners, the Air Transport Board and the Canadian Maritime Commission giving it regulatory and judicial functions with respect to almost all aspects of railway, commercial air and merchant marine services. The Act also provides for the regulation of extra-provincial motor vehicle transport and commodity (solids) pipelines but the applicable parts of the Act were not yet in effect as at mid-1970. The Commission is divided into five Committees for the purpose of performing its regulatory duties under the Act: the Railway Transport Committee; the Air Transport Committee; the Water Transport Committee; the Motor Vehicle Transport Committee; and the Commodity Pipeline Transport Committee.

The Canadian Transport Commission is also given the responsibility for undertaking studies and research into the economic aspects of all modes of transport within, into or from Canada. It reports to Parliament through the Minister of Transport.

Commissioner of Official Languages.—Appointed by Parliament pursuant to the Official Languages Act (SC 1968-69, c. 54), the Commissioner holds office for a term of seven years, renewable until retirement age. He is responsible to Parliament for ensuring recognition of the equal status of French and English as Canada's official languages and for ensuring compliance with the spirit and intent of the Act in all the institutions of the Parliament and Government of Canada. To this end, the Commissioner is empowered to receive and investigate complaints from the public, as well as to initiate investigations into possible violations of the Act. The results of these investigations must be communicated to the complainants and the institutions concerned. The Commissioner reports annually to Parliament on the conduct of his office and may make recommendations for changes in the Act as he deems necessary or desirable.

Department of Communications.—The Department of Communications was established under Part II of the Government Organization Act, 1969 (SC 1968-69, c. 28), which received Royal

Assent on Mar. 28, 1969. The duties and powers of the Minister cover all matters over which the Parliament of Canada has jurisdiction relating to telecommunications and the development and utilization generally of communication undertakings, facilities, systems and services for Canada. They include the planning and co-ordination of telecommunication services for departments and agencies of the Government of Canada, formerly under the jurisdiction of the Department of Transport, assistance to communications systems and facilities to adjust to changing domestic and international conditions, and the securing, by international regulation or otherwise, of the rights of Canada in communications matters. The Minister of Communications is the Postmaster General and has the management and direction of the Post Office Department.

The Canadian Overseas Telecommunications Corporation reports to Parliament through the Minister of Communications.

Department of Consumer and Corporate Affairs.—Legislation to establish this Department (SC 1967-68, c. 16) received Royal Assent on Dec. 21, 1967. This statute transformed the former Department of the Registrar General of Canada into the new Department of Consumer and Corporate Affairs. The duties, powers and functions of the Minister extend to and include all matters over which the Parliament of Canada has jurisdiction, not by law assigned to any other department, branch or agency of the Government of Canada, relating to: consumer affairs; corporations and corporate securities; combines, mergers, monopolies and restraint of trade; bankruptcies and insolvencies; and patents, copyrights and trade marks.

As Registrar General of Canada, the Minister of Consumer and Corporate Affairs is the custodian of the Great Seal of Canada, the Privy Seal of the Governor General, the Seal of the Administrator of Canada and the Seal of the Registrar General of Canada. He is also Custodian of Enemy Property. The Bureau of Consumer Affairs co-ordinates government activities in the field of consumer affairs.

The Restrictive Trade Practices Commission (Combines Investigation Act) is domiciled in the Department and reports directly to the Minister.

Dominion Bureau of Statistics.—The Dominion Bureau of Statistics was set up by statute in 1918 as a central statistical department for Canada (SC 1918, c. 43). In 1948 this statute, which had been consolidated as the Statistics Act (RSC 1927, c. 190), was repealed and replaced by the Statistics Act (RSC 1952, c. 257); it was amended by SC 1952-53, c. 18, assented to Mar. 31, 1953.

The function of the Dominion Bureau of Statistics is to compile, analyse and publish statistical information relative to the commercial, industrial, financial, social and general condition of the people and to conduct regularly a census of population and agriculture of Canada as required under the Act.

The Bureau is a major publication agency of the Federal Government; its reports cover all aspects of the national economy. The administrative head of the Bureau is the Dominion Statistician who has the rank of a Deputy Head of a department and reports to Parliament through the Minister of Industry, Trade and Commerce.

Department of Energy, Mines and Resources.—The Department of Energy, Mines and Resources was created in 1966 by the Government Organization Act (SC 1966, c. 25). The Department, in addition to its administrative services, is organized into four groups: the Mines and Geosciences Group includes the Geological Survey of Canada, the Mines Branch, the Surveys and Mapping Branch, the Earth Physics Branch and the Polar Continental Shelf Project, all of which are engaged in research and the provision of information in their respective fields; the Mineral Development Group includes the Mineral Resources Branch, which gathers economic data for all minerals for use of government, industry and the public and conducts administrative functions of resource management, the Explosives Division which controls, under the provisions of the Explosives Act, the production and handling of explosives, and the Quebec Regional Office; the Water Group is concerned with all types of water matters including groundwater and oceanic investigations and surveys, water pollution, water power, water conservation and control, and federal-provincial and international studies and regulations; the Energy Development Group has broad responsibilities relating to the development of plans and policies for all forms of energy, the development of programs, legislation and agreements to implement those policies, the direction of studies relating to energy sources and requirements, and the co-ordination of policy advice. The Assistant Deputy Minister (Energy) serves as adviser on over-all plans and policies relating to energy sources and requirements.

The following Crown corporations report to Parliament through the Minister of Energy, Mines and Resources: Atomic Energy of Canada Limited, Eldorado Nuclear Limited, Eldorado Aviation Limited and the Atomic Energy Control Board. The National Energy Board, the International Boundary Commission and the Interprovincial Boundary Commissions also report to Parliament through the Minister.

Department of External Affairs.—This Department was established in 1909 by "An Act to create a Department of External Affairs" (RSC 1952, c. 68). Its main function is the protection and advancement of Canadian interests abroad. The Minister responsible for the Department is the Secretary of State for External Affairs. The senior permanent officer (Deputy Minister) of the Department, the Under-Secretary of State for External Affairs, is assisted by an Associate Under-

Secretary and by four Assistant Under-Secretaries and is advised by officers in charge of Branches Offices and Divisions. The Heads of these units are each responsible for a part of the work of th Department and are assisted by Foreign Service Officers, Administrative Services Officers an specialists in various occupational groups, as well as by an administrative staff. Officers servin abroad are formally designated as High Commissioners, Ambassadors, Ministers, Counsellor First Secretaries, Second Secretaries, Third Secretaries and Attachés at diplomatic posts an Consuls General, Consuls and Vice-Consuls at consular posts. Canada maintains approximatel 135 diplomatic, consular and other missions, 52 of which are non-resident.

The work of the Department in Ottawa is performed by three Branches, two Offices and 2 Divisions. The three Branches are responsible respectively for Personnel, Finance and Administra tion, and Communications and Information Systems. The two Offices are concerned with Politica Military Affairs and Economic Affairs. The Divisions are grouped into two categories: Area Div sions are African and Middle Eastern, Commonwealth, European, Far Eastern, Latin American an United States; Functional Divisions are Arms Control and Disarmament, Consular, Co-ordinatio Cultural Affairs, Historical, Information, Legal, Passport, Press, Protocol, Relations entre Pay Francophones, Scientific Relations and Environmental Problems, Security and Intelligence Liais and United Nations. In addition, there is an Inspection Service, a Policy Analysis Group and a Operations Room.

The International Joint Commission reports to the Secretary of State for External Affairs Canada as well as to the Secretary of State of the United States. The Secretary of State for E ternal Affairs reports to Parliament for the Canadian International Development Agency.

Department of Finance.—This Department was created by Act of Parliament in 1869 an now operates under the Financial Administration Act (RSC 1952, c. 116). The Department responsible for the financial administration of Canada including the raising of money required f the various government activities by way of taxation or borrowing. The work of the Departme is organized into the following Divisions: Tax Policy, Economic Development, Federal-Provinci Relations, Fiscal Policy, Pensions and Social Insurance, Resource Programmes, Municipal Grant Economic Analysis, Government Finance and Capital Markets, Crown Corporations Financin International Finance, Tariffs, International Economic Relations, and International Programm The Inspector General of Banks is a branch of the Department. The Tariff Board, the Bank Canada and its subsidiary, the Industrial Development Bank, the Anti-dumping Tribunal, t Canada Deposit Insurance Corporation, and the Department of Insurance report to Parliame through the Minister of Finance who is also the spokesman in the Cabinet and the House of Co mons for the Auditor General of Canada.

Department of Fisheries and Forestry.—Established by the Government Organization A 1969, the Department of Fisheries and Forestry administers all matters within federal jurisdicti relating to (1) sea coast and inland fisheries, and (2) the forest resources of Canada, except tho assigned by law to any other federal department or agency. The Department has three princip components—the Fisheries Service, the Fisheries Research Board, and the Canadian Forestry S vice. A fourth component groups together common supporting services.

Responsibilities of the Fisheries Service were inherited from the Department of Fisheri established in 1930 to succeed what had been, since Confederation, a branch service. They inclu conservation and protection of fisheries through enforcement of laws and regulations, cultivation a development of fish stocks by scientific and technical means, inspection of fish products for quali control, encouragement of industrial development by technical and financial aid, economics resear and intelligence services to industry and the public, and promotion of fisheries and fish products information and consumer education programs. Field activities are administered through regio offices in St. John's, Nfld., Halifax, N.S., Quebec, Que., Winnipeg, Man., and Vancouver, B. The Fisheries Service is represented on the following international commissions: Pacific Salm Fisheries, Pacific Halibut, Northwest Atlantic Fisheries, North Pacific Fisheries, Whaling, Gr Lakes Fishery, North Pacific Fur Seal, Atlantic Tuna, Inter-American Tropical Tuna, and t International Council for the Exploration of the Sea.

The Fisheries Research Board traces its antecedents to 1898. It functions under the Fisher Research Board Act of 1937 (amended in 1947 and 1952-53), and is headed by a full-time chairm and not more than 18 other members, mostly university scientists and industry representativ The Board operates major research establishments in St. John's, Nfld., Halifax and Dartmou N.S., St. Andrew's, N.B., Ste. Anne de Bellevue, Que., Winnipeg, Man., and Vancouver and N naimo, B.C. Board scientists carry out research on distribution of fish stocks, biology and h history of fishes, marine mammals and other aquatic creatures and plants, oceanography, fishi techniques and on quality and nutritive value of fisheries products.

The main functions of the Canadian Forestry Service include: (1) the conduct of research rel ing to protection, management, harvesting and utilization of the forest resources of Canada and t better utilization of forest products; (2) the conduct of economic studies relating to forest resourc forest industries and the marketing of forest products; (3) encouragement of public co-operation the protection and wise use of the forest resources; (4) co-operation with provincial governments a others by means of agreements on forestry matters; (5) provision of forest surveys and advice rel ing to the protection and management of federally administered forest lands; (6) protection a management of forests on federal lands at the request of the department or agency concerned; a

) assistance with external aid programs relating to forestry. Forest management responsibilities the Service are confined to its forest experiment stations and to providing information on forest ventory and management planning to other federal departments administering forested lands.

Seven regional establishments carry out multi-disciplinary programs of forestry research, sur-eys, development projects and consultative and liaison services in their respective areas; they are cated at St. John's, Nfld., Fredericton, N.B., Ste. Foy, Que., Sault Ste Marie, Ont., Winnipeg, an., Calgary, Alta., and Victoria, B.C. Two Forest Products Laboratories—at Ottawa and ancouver—conduct forest products research. In addition, research in restricted disciplinary fields conducted by the Insect Pathology Research Institute at Sault Ste Marie; the Chemical Control esearch Institute, the Forest Fire Research Institute, the Forest Management Institute, the orest Ecology Institute and the Forest Economics Research Institute, all at Ottawa, and by the etawawa Forest Experiment Station at Chalk River, Ont.

The Minister of Fisheries and Forestry reports to Parliament on behalf of the Fisheries Prices eport Board, the Freshwater Fisheries Marketing Corporation and the Eastern Rockies Forest onservation Board.

Historic Sites and Monuments Board.—This Board was established in 1919 and amended to s present form in 1953 by an Act of Parliament (SC 1952-53, c. 39 as amended by SC 1955, c. 20 and C 1969, c. 43). It is an appointed body of 12 provincial and two federal officials which advises the inister of Indian Affairs and Northern Development on matters of national historic importance ith particular reference to commemoration or preservation.

Department of Indian Affairs and Northern Development.—The Department of Indian ffairs and Northern Development was established in June 1966 under the terms of the Government rganization Act (SC 1966, c. 25), superseding the Department of Northern Affairs and National esources. In 1968, the Department was reorganized, creating, in addition to departmental support rvices and a Technical Services Branch, three distinct program areas: (1) the Indian and Eskimo ffairs Program includes education, Indian trust administration and an Indian-Eskimo Bureau which ovides a focal point for the federal administration for Indian and Eskimo affairs; (2) the Northern evelopment Program covers major resource development in the Canadian North, industrial evelopment for Indians and Eskimos, land management of Indian reserves, wet-land acquisition, anagement of territorial resources along with economic research and advice; (3) the Conservation rogram includes National Parks, Historic Sites and Parks and the Canadian Wildlife Service. s a result of the proposed Indian Policy, a group called the Indian Consultation and Negotia-on Group has been created to carry out negotiations and consultations with Indian organizations d banks and with provincial governments on the policy proposals.

The Commissioner of the Northwest Territories and the Commissioner of Yukon Territory port to Parliament through the Minister of Indian Affairs and Northern Development. The inister is also responsible to Parliament for the Northern Canada Power Commission, the Na-onal Battlefields Commission, the Historic Sites and Monuments Board of Canada and the orthern Transportation Company Limited. The Northern Scientific Adviser's Office acts in advisory capacity to the Minister.

Department of Industry, Trade and Commerce.—Under the Government Organization Act 969, the Departments of Industry and of Trade and Commerce were merged to form the Depart-ent of Industry, Trade and Commerce, the functions of which are to: (1) promote the establish-ent, growth and efficiency of manufacturing, processing and tourist industries in Canada, contribute the sound development and productivity of Canadian industry generally and foster the expansion Canadian trade; (2) develop and carry out such programs and projects as may be appropriate to) assist manufacturing and processing industries to adapt to changes in technology and to changing onditions in domestic and export markets, (*b*) assist manufacturing and processing industries to evelop their unrealized potential, to rationalize and re-structure their productive facilities and orporate organizations and to cope with exceptional problems of adjustment, and (*c*) promote and ssist product and process development and increased productivity, the greater use of research, the pplication of advanced technology and modern management techniques, the modernization of quipment, the utilization of improved industrial design and the development and application of ound industrial standards in Canada and in world trade; (3) improve the access of Canadian prod-ce, products and services into external markets through trade negotiations and the promotion of ade relations with other countries and contribute to the improvement of world trading conditions; 4) promote the optimum development of Canadian export sales of all produce, products and serv-es; (5) provide support services for industrial and trade development, including information, nport analysis and traffic services; (6) analyse the implications for Canadian industry, trade and ommerce and for tourism of government policies related thereto in order to contribute to the rmulation and review of those policies; (7) compile and keep up to date detailed information in spect of manufacturing and processing industries in Canada and of trends and developments in anada and abroad relating to Canadian industrial development and trade; and (8) promote the timum development of income from tourism and compile and keep up to date detailed information respect of the tourist industry and of trends and developments in Canada and abroad relating to urism.

The Department is organized into five major functional groups: Trade and Industrial Policy; ffice of Economics; Industry and Trade Development; Office of Tourism; and Administration.

The Trade and Industrial Policy component comprises the Office of General Relations, the Of of Area Relations and the Office of Industrial Policy Adviser. The Office of Economics has following Branches: General Analysis, Investment Analysis, Market Analysis, and Productivi The Industry and Trade Development segment contains an Operations group composed of industry sector Branches (Chemicals; Electrical and Electronics; Agriculture, Fisheries and F Products; Machinery; Materials; Apparel and Textiles; Mechanical Transport; Wood Produ Aerospace, Marine and Rail); an External Services group consisting of the International Defe Programs Branch and the Trade Commissioner Service which operates 73 trade offices in 52 co tries; a Promotional Services group containing the Industry, Trade and Traffic Services Bra which operates eight Regional Offices in Canada, the Fairs and Missions Branch, the Publi Branch and the Canadian Government Participation in the 1970 World Exposition (OSAKA Japan; and the Office of Design Adviser and the Office of Scientific and Technological Advi The Office of Tourism includes the Travel Industry Branch and the Canadian Government Tra Bureau.

The Minister also reports to Parliament on behalf of the Dominion Bureau of Statistics and Export Development Corporation. Advisory Boards reporting to the Minister are the Adjustm Assistance Board, the General Adjustment Assistance Board, the Machinery and Equipm Advisory Board, the Pharmaceutical Industry Development Advisory Committee, and the tional Design Council.

Information Canada.—This organization, established Apr. 1, 1970, was created to ad federal departments on their information programs, to co-ordinate information programs involv more than one department, and to produce information on the Federal Government and on Can in general. Such information will be disseminated by conventional means and also through gional Enquiry Centres to be set up across the country. Equally important is its responsibilit provide Parliament and Federal Government agencies with information on the attitudes and opini of the Canadian people, as expressed individually, through the media or through attitudinal surv

On the date of its establishment, Information Canada assumed responsibility for the publis functions of the Queen's Printer, the Canadian Government Exhibition Commission and the S Photo Library of the National Film Board. It reports to Parliament through the Ministe Supply and Services.

Department of Insurance.—The Minister of Finance is responsible for the Departmen Insurance which originated in 1875 as a branch of the Department of Finance but was constitu a separate Department in 1910. It is authorized and governed by the Department of Insura Act (RSC 1952, c. 70). Under the Superintendent of Insurance, who is the Deputy Head, the partment administers the statutes of Canada applicable to: insurance, loan and trust compa incorporated by the Parliament of Canada; provincially incorporated insurance companies istered with the Department; British and foreign insurance companies operating in Canada; sm loans companies and money-lenders; co-operative credit societies registered under the Co-opera Credit Associations Act; pension plans organized and administered for the benefit of persons ployed in connection with certain federal works, undertakings and businesses; and life insur issued to certain members of the Public Service prior to May 1954.

Under the relevant provincial statutes, the Department examines trust companies incorpora in the Provinces of Manitoba and New Brunswick and loan and trust companies incorporate the Province of Nova Scotia.

International Joint Commission.—This Commission was established under a Britain-Un States treaty signed Jan. 11, 1909 and ratified by Canada in 1911. The Commission, compose six members (three appointed by the President of the United States and three by the Governm of Canada), is governed by five specific Articles of the Boundary Waters Treaty of 1909. Commission's approval is required for any use, obstruction or diversion of boundary waters affec the natural level or flow of boundary waters in the other country; and for any works in waters flo from boundary waters or below the boundary in rivers flowing across the boundary which r the natural level of waters on the other side of the boundary.

Problems arising along the common frontier are also referred to the Commission by ei country for examination and report, such report to contain appropriate conclusions and recommen tions. In addition, questions or matters of difference between the two countries may be refe to the Commission for decision, provided both countries consent.

The Commission reports to the Secretary of State for External Affairs of Canada and to Secretary of State of the United States.

Department of Justice.—This Department, established by SC 1868, c. 39, now oper under authority of the Department of Justice Act (RSC 1952, c. 71 as amended by SC 1960, c. 4 SC 1966, c. 25). The Minister of Justice is the official legal adviser of the Governor General the legal member of the Queen's Privy Council for Canada. It is his duty to see that the adm stration of public affairs is in accordance with law, to superintend all matters connected with administration of justice in Canada that are not within the jurisdiction of the provincial gov ments, to advise upon the legislation and proceedings of the provincial legislatures, and generall advise the Crown upon all matters of law referred to him by the Crown. The Minister of Justic

x officio, Her Majesty's Attorney General of Canada. In this capacity it is his duty to advise the eads of the departments of the Government of Canada upon all matters of law connected with such epartments, to settle and approve all instruments issued under the Great Seal of Canada, and to egulate and conduct all litigation for or against the Crown in the right of Canada.

Department of Labour.—The Department of Labour was established in 1900 by Act of Parliament (SC 1900, c. 24) and now operates under authority of the Department of Labour Act RSC 1952, c. 72). The Department administers, under the Minister of Labour, legislation dealing ith: industrial relations, investigation of disputes, etc.; fair employment practices; the regulation of ir wages and hours of labour; female employee equal pay; government annuities; government em- loyee compensation; merchant seamen compensation; safety in employment; and hours of work, inimum wages, annual vacations and holidays with pay. It promotes joint consultation with ndustry through labour-management committees and operates a Women's Bureau. The Depart- ent publishes the *Labour Gazette* and other publications, as well as general information on labour- anagement, employment, manpower and related subjects.

The Merchant Seamen Compensation Board reports to the Minister of Labour. The Depart- ent is the official liaison agency between the Canadian Government and the International Labour rganization. The Unemployment Insurance Commission and the Canada Labour Relations oard report to Parliament through the Minister of Labour. The Canada Labour Relations Board dministers certain provisions of the Industrial Relations and Disputes Investigation Act.

Library of Parliament.—The Library of Parliament as such was established in 1871 (SC 1871, . 21) although it existed earlier. It currently functions under RSC 1952, c. 166 and SC 1955, c. 35. The Library of Parliament keeps all books, maps and other articles that are in the joint possession f the Senate and the House of Commons. The Parliamentary Librarian is also responsible for he Parliamentary Reading Room. Persons entitled to borrow books from the Library of Parlia- ent are the Governor General, Members of the Privy Council, Members of the Senate and the House of Commons, Officers of the two Houses, Justices of the Supreme Court of Canada and the Exchequer Court, and members of the Press Gallery. In addition, books are lent to other libraries nd government agencies and reference service is given to scholars. A special research branch erves Parliamentarians only. The Parliamentary Librarian has the rank of a Deputy Head of department and is reponsible for the control and management of the Library under the Speaker f the Senate and the Speaker of the House of Commons assisted by a Joint Committee appointed y the two Houses.

Department of Manpower and Immigration.—This Department was constituted in January 966 by the Government Organization Act (SC 1966, c. 25), which was proclaimed effective on Oct. 1, 966, under the Minister of Manpower and Immigration. It is composed of two operational divisions nd four support services.

The Canada Manpower Division is responsible for the counselling and placement of workers, he recruitment of workers to meet industry's requirements, manpower training and mobility, com- unity adjustment of migrants and immigrants, rehabilitation of vocationally handicapped work- rs, and manpower adjustment and employer consultation services. The Canada Immigration Di- ision administers the Immigration Act and Regulations and is responsible for the selection, exam- nation and movement of immigrants to Canada, and for the exclusion or deportation of undesirables.

The Program Development Service provides research and develops and evaluates programs for he two main operating divisions. Other support services are Financial and Management, Personnel, nd Information.

The Department maintains 369 Canada Manpower Centres and 94 Canada Immigration Centres n Canada, as well as regional offices located in Halifax, Montreal, Toronto, Winnipeg and Vancouver. t also maintains 42 Canadian immigration offices abroad.

Department of National Defence.—The Department of National Defence and the Canadian Forces operate under the National Defence Act (RSC 1952, c. 184); the Canadian Forces are admini- tered by the Minister of National Defence. Since August 1964, when a single Chief of Defence Staff was appointed, the reorganization of the Canadian Forces Headquarters, the Command struc- ure and the consolidation of the Canadian Forces Bases has been continuing. In June 1965, a plan was announced to reduce the previous major commands in Canada to six: Maritime, Mobile, Air Transport, Air Defence, Training and Materiel. Subsequent to this announcement, a decision was made to amalgamate Materiel Command Headquarters with that of the Chief of Technical Ser- vices, Canadian Forces Headquarters and to re-assign the former Materiel Command units to the remaining five functional commands. The Act to reorganize the Canadian Forces was proclaimed n Feb. 1, 1968 and the forces were thereby unified.

A further reorganization was undertaken as of April 1970. Regional responsibilities were as- igned to all the functional commanders except Air Defence Commander. Command of Reserves f the land and sea environments was delegated to Mobile Command and Maritime Command, respectively.

The Defence Research Board, created in 1947 to carry out research relating to national defence nd to advise the Minister on all relevant matters of a scientific or technical nature, functions under

the National Defence Act. The Crown corporation, Defence Construction (1951) Limited, repo to Parliament through the Minister of National Defence. The Emergency Measures Organizati (EMO) reports to the Minister of National Defence through the Deputy Minister.

National Energy Board.—This Board was established under the National Energy Boa Act, 1959 for the broad purpose of assuring the best use of energy resources in Canada. The Boa composed of five members, is responsible for the regulation of the construction and operation of t oil and gas pipelines that are under the jurisdiction of the Parliament of Canada, the tolls charg for transmission by oil and gas pipelines, the export and import of gas and the export of elect power, and the construction of the lines over which such power is transmitted. The Board is a required to study and keep under review all matters relating to energy under the jurisdiction the Parliament of Canada and to recommend such measures as it considers necessary and advisa on the subject. The Board reports to Parliament through the Minister of Energy, Mines and Reso ces.

National Film Board.—The National Film Board, established in 1939, operates under t National Film Act (RSC 1952, c. 185) which provides for a Board of Governors of nine member a Government Film Commissioner, appointed by the Governor in Council, who is chairman the Board, three members from the Public Service of Canada and five members from outside t Public Service. The Board reports to Parliament through the Secretary of State. The Board responsible for advising the Governor in Council on film activities and is authorized to produce a distribute films in the national interest and, in particular, films "designed to interpret Canada Canadians and to other nations".

Department of National Health and Welfare.—This Department was established in Octol 1944 under authority of the Department of National Health and Welfare Act (RSC 1952, c. 74). T original Department of Health formed in 1919 later became part of the Department of Pensions a National Health, which was replaced in 1944 by the Department of National Health and Welf and the Department of Veterans Affairs.

The Department, headed by the Minister of National Health and Welfare, is administered two Deputy Ministers. It is composed of: the Research and Statistics Directorate; the Admi stration Branch; and seven other Branches—Health Services, Health Insurance and Resource Medical Services, Food and Drug, Income Security, Welfare Assistance and Services and Spec Programmes. The health Branches come under the Deputy Minister of National Health who a carries responsibility arising out of Canada's role in the international health field. The welf Branches are the responsibility of the Deputy Minister of National Welfare.

The Department has charge of matters relating to the promotion and preservation of the healt social security and social welfare of the people of Canada over which the Parliament of Canada h jurisdiction. Its functions include investigation and research into public health and welfare; spection and medical care of immigrants and seamen and medical services for and in conjunction wi the Canadian Coast Guard Service; supervision of health facilities on all forms of transportatio enforcement of regulations of the International Joint Commission relating to health; promotion a conservation of the health of Federal Government employees; collection, publication and dist bution of information relating to health, sanitation and social and industrial conditions affecting t health of Canadians; and co-operation with provincial authorities with co-ordination of efforts dir ted toward the preservation and improvement of public health and toward the provision of soc security and welfare for the people of Canada.

The programs developed to enable the Department to carry out its responsibilities include: t National Health Grant Program under which grants are made available to the provinces for t development and extension of health services; federal emergency health and welfare servic assistance and consultation services to the provinces, upon request, respecting blindness contr child and maternal health, environmental health, mental health, dental health, nursing, medi rehabilitation, bacteriology, virology, parasitology and clinical chemistry, zoonoses, nutrition a health facilities design; an environmental health program which is concerned with the provision advice, the development of standards, and the design and conduct of studies and research direct to the assessment of the health significance and control of such environmental health hazards as and water pollution, noise, industrial hazards, and exposure to harmful radiations; a drug adve reaction reporting program, and a central clearing house for the Canadian Poison Control Centr health, medical and hospital services to the Indians and Eskimos across Canada and to other e ments of the population in the Yukon and Northwest Territories; government employee heal services; and a system of grants to the provinces for professional welfare training, welfare resear and general welfare services. The Department also acts as co-ordinator of the international welfa activities in which Canada is engaged.

The Medical Research Council reports to Parliament through the Minister of National Heal and Welfare.

National Library.—The National Library came formally into existence on Jan. 1, 1953, wi the proclamation of the National Library Act (RSC 1952, c. 330). It publishes *Canadiana*, a mont ly catalogue of new publications relating to Canada, with an annual cumulation. The Library al publishes other bibliographies. Its Reference Division maintains the *National Union Catalog*

which embodies the author catalogues of the major libraries in the ten provinces and is thus a key to the book collections of the whole country. The Library's own bookstock totals more than 00,000 volumes. The National Librarian reports to Parliament through the Secretary of State.

National Parole Board.—The establishment of the National Parole Board, which was formed n January 1959, is authorized by the Parole Act (SC 1958, c. 38) by which it is given absolute jurisdiction over all matters of parole, except that in respect of commuted death sentences it may only ecommend rather than approve parole. It is composed of a chairman and eight members appointed by Order in Council for a ten-year period. The Board reports to Parliament through the Solicitor General of Canada.

Department of National Revenue.—From Confederation until May 1918, customs and inland evenue Acts were administered by separate departments; after that date they were amalgamated nder one Minister as the Department of Customs and Inland Revenue. In 1921 the name was hanged to the Department of Customs and Excise. In April 1924 collection of income taxes was laced under the Minister of Customs and Excise and, under the Department of National Revenue Act, 1927, the Department became known as the Department of National Revenue.

The Customs and Excise Division of the Department is responsible for the assessment and collection of customs and excise duties as well as of sales and excise taxes. The Taxation Division is responsible for the assessment and collection of income taxes, gift tax, old age security tax, Part I of the Canada Pension Plan, and estate taxes for Canada and all provinces, with certain exceptions, through its 29 district taxation offices and its Taxation Data Centre.

The Minister of National Revenue is responsible to Parliament for the Tax Appeal Board.

Office of the Auditor General.—This Office originated in 1878 (SC 1878, c. 7) and currently unctions under the Financial Administration Act (RSC 1952, c. 116). The Auditor General is responsible for examining accounts relating to the Consolidated Revenue Fund and to public property, and for reporting annually to the House of Commons the results of his examinations. He also audits the accounts of various Crown corporations and other instrumentalities.

Office of the Chief Electoral Officer.—This Office was established in 1920 under the provisions of the Dominion Elections Act, now the Canada Elections Act (RSC 1960, c. 39, and amendments thereto), and is responsible for the conduct of all federal elections as well as the elections of members of the Northwest Territories Council and of the Yukon Territory Council. In addition, it conducts any vote taken under the Canada Temperance Act. The Chief Electoral Officer is responsible directly to Parliament, the Secretary of State acting as spokesman for him in the Cabinet and the House of Commons.

Office of the Representation Commissioner.—This Office was established in 1963 under the provisions of the Representation Commissioner Act (SC 1963, c. 40). The Representation Commissioner is responsible for preparing maps showing the distribution of population in each province and setting out alternative proposals respecting the boundaries of electoral districts in each province. It is also the Representation Commissioner's continuing responsibility to discharge his several duties pursuant to the provisions of the Canada Elections Act. The Secretary of State acts as spokesman for the Office in the Cabinet and the House of Commons.

Privy Council Office.—For administrative purposes, the Privy Council Office is regarded as a Department of Government under the Prime Minister. The Clerk of the Privy Council, under whose direction its functions are carried out, is considered as a Deputy Head and takes precedence among the chief officers of the Public Service. The authority of the Privy Council Office is to be found in Sects. 11 and 130 of the British North America Act, 1867, which constituted a Council to aid and advise in the government of Canada to be styled the Queen's Privy Council for Canada. In 1940, upon the wartime development of Cabinet committees and the consequent need for orderly secretarial procedures such as agenda, explanatory memoranda and minutes, the Principal Secretary in the Prime Minister's Office was designated Clerk of the Privy Council and Secretary to the Cabinet. Since 1946, the Privy Council Office has been further reorganized, developed and enlarged and certain administrative functions of the Privy Council Office and the Prime Minister's Office have been closely integrated in the interests of efficiency and economy.

The organization of the Privy Council Office at present consists primarily of the Cabinet Secretariat with the following divisions reporting to the Clerk of the Privy Council and Secretary to the Cabinet: Deputy Secretary to the Cabinet (Operations); Deputy Secretary to the Cabinet (Plans); Co-ordinator of Federal-Provincial Relations; and Director of the Science Secretariat. Within the Privy Council Office, submissions to the Governor in Council are received, draft orders and regulations prepared, approved Orders are circulated and, in addition, the duties of editing, registering and publishing the federal statutory regulations in Part II of the *Canada Gazette* are carried out. The various secretaries deal with secretarial work for the Cabinet and for Cabinet Committees and interdepartmental committees. This involves the preparation and circulation of agenda and necessary documents to Ministers and recording and circulating decisions; liaison with departments and agencies of the government; and the preparation of material for the Prime Minister.

The Office of the Prime Minister is organized as a Secretariat associated with the Privy Counci Office and includes members of the Prime Minister's personal staff responsible for general secretaria duties, the drafting of letters, the arrangement of appointments to interview the Prime Minister o for his public appearances or for the release of his statements on matters of public interest, an for assisting the Prime Minister in his parliamentary duties.

Public Archives.—The Public Archives was founded in 1872 and is administered under th Public Archives Act (RSC 1952, c. 222) by the Dominion Archivist who has the rank of a Deput Minister and reports to Parliament through the Secretary of State. Its purpose is to assemble an make available to the public a comprehensive collection of source material relating to the histor of Canada. It also has broad responsibilities in regard to the promotion of efficiency and economy in the management of the Federal Government records. The Historical Branch, located in th National Library and Archives Building, is a centre for research on the development of Canada In addition to the selected records of the Federal Government, it possesses an extensive collectio of private papers of individuals and societies, a map collection which is the most important of it kind in the country, and an extensive collection of paintings, drawings, prints, photographs, soun recordings and films relating to Canada. A specialized library is also at the disposal of searchers The Records Management Branch operates a large Records Centre in Ottawa and regional centre in Toronto and Montreal where non-current departmental records are centralized, stored and serv iced. It assists departments in their records management program. The Administrative Techni cal Services Branch operates the Central Microfilm Unit for the several departments of government

Under the terms of the Laurier House Act (RSC 1952, c. 163), the Public Archives is responsibl for the administration of Laurier House as a museum.

Public Service Commission.—Arrangements were made for civil service appointments unde the first Civil Service Act of 1868 but the first Civil Service Commission was created only in 1908 This established the beginnings of the merit system which is today the cornerstone of personne administration in the Public Service. The Act of 1918 gave the Commission authority to contro recruitment, selection, appointment, classification and organization and to recommend rates o pay. The next Civil Service Act, passed in 1961, strengthened the principles of the merit system clarified the Commission's role in other areas of personnel administration, and gave the staff as sociations the right to be consulted on matters about remuneration and conditions of employment

The Public Service Employment Act which came into force on Mar. 13, 1967, redefined the Commission's role as the central staffing agency and extended its authority to the Public Service covering certain groups of employees exempt from the previous Acts. The Public Service is specifie in Schedule A of the Public Service Staff Relations Act. It does not include Crown corporations such as the Canadian Broadcasting Corporation, the Central Mortgage and Housing Corporation the Canadian National Railways and Air Canada. The new Act also reaffirms the merit principle at the same time permitting delegation of the Commission's authority, although not its respon sibility, to Parliament. Under the Act, the Commission is relieved of responsibility for recommend ing rates of pay and conditions of service to the Government, for classification, and for consultatio with staff associations on matters that are now the subject of collective bargaining.

The Public Service Commission reports to Parliament through the Secretary of State.

Department of Public Works.—The Department was constituted in 1867 and operates unde the legislative authority of the Public Works Act of Parliament. It is responsible for the manage ment and direction of the public works of Canada and, except as specifically provided in othe Acts, attends to the construction and maintenance of public buildings, wharves, piers, roads an bridges and the undertaking of dredging and protection work. Federal Government interest i the Trans-Canada Highway and the Northwest Highway System is also handled by the Depart ment. The Department has six Regional Offices—one each at Halifax, Montreal, Ottawa, Toronto Edmonton and Vancouver—and District Offices at other key points across the country are als maintained. Departmental organization includes the Planning and Operations Branch, the Desig Branch and the following Directorates: Accommodation Programs, Engineering Programs, Depart mental Planning, Construction and Works Management, Program Evaluation, Financial Services Personnel Administration, Administrative Services, Chief Architect, Chief Engineer, Chief o Accommodation Standards, Information Services, Legal Services (Justice) and the Dominio Fire Commissioner.

Department of Regional Economic Expansion.—This Department was established unde the Government Organization Act, 1969 (SC 1968-69, c. 28) which received Royal Assent on Mar 28, 1969. Its function is to ensure that economic growth is dispersed widely enough across Canad to bring employment and earning opportunities in the slow-growth regions as close as possible t those in the other parts of the country, without interfering with a high over-all rate of national growth. The legislation authorizes the Department, in co-operation with provincial governments and other federal agencies, to prepare development plans and programs designed to meet the specia needs of particular areas. The main components of the Department previously existed within the framework of the Department of Forestry and Rural Development but certain financial changes were made by the 1969 legislation; the Department's operations are to be conducted on the basis of annual Parliamentary appropriations. The functions of the Area Development Agency, formerly

der the Minister of Industry, have been absorbed into the new Department which has also be-me responsible for programs under the Prairie Farm Rehabilitation Act (PFRA), the Agri-ltural and Rural Development Act (ARDA), the Maritime Marshlands Rehabilitation Act and e Atlantic Provinces Power Development Act. An Atlantic Development Council has been tablished to advise the Minister on the whole range of programs and policies for fostering eco-mic expansion and social adjustment in the Atlantic region; this Council replaced the Atlantic evelopment Board, a Crown corporation that previously administered a fund to defray the ex-nses of planning and of projects initiated for the stimulating of growth in that area.

The Minister of Regional Economic Expansion reports to Parliament for the Cape Breton evelopment Corporation and the National Capital Commission.

Royal Canadian Mounted Police.—The Royal Canadian Mounted Police, a civil force main-ined by the Federal Government, was organized in 1873 as the North-West Mounted Police. now operates under the Royal Canadian Mounted Police Act, 1959 and is responsible for enforcing deral laws throughout Canada. By agreement with the governments of eight provinces (all ovinces except Ontario and Quebec) it is also responsible for enforcing provincial laws within ose provinces and for policing many district municipalities, cities and towns. A Commissioner, ppointed by the Governor in Council, has the control and management of the Force and of all atters connected therewith; he functions under the direction of the Solicitor General of Canada.

Department of the Secretary of State.—The duties, powers and functions of the Secretary State of Canada extend to and include all matters over which the Parliament of Canada has risdiction, not by law assigned to any other department, branch or agency of the Government Canada, relating to: citizenship; elections; State ceremonial, the conduct of State correspondence nd the custody of State records and documents; the encouragement of the literary, visual and erforming arts, learning and cultural activities; and libraries, archives, historical resources, muse-ns, galleries, theatres, films and broadcasting.

The responsibilities of the Department of the Secretary of State include those pertaining to e administration of the following branches: Citizenship; Citizenship Registration; Education upport; Official Languages Program; Artistic and Cultural Support; Ceremonies and Special Events; nd Translation Bureau.

The Secretary of State reports to Parliament for the Canadian Film Development Corpora-on, the National Arts Centre Corporation, the National Film Board, the National Library, the ublic Archives, the National Museums of Canada, the Canada Council, the Canadian Broadcasting orporation, the Canadian Radio-Television Commission, the Company of Young Canadians nd the Public Service Commission.

Department of the Solicitor General.—Before 1936, the Office of the Solicitor General was ither a Cabinet post or a Ministerial post outside the Cabinet. From 1936 to 1945 the position did ot exist, the duties of the Office being wholly absorbed by the Attorney General of Canada. The olicitor General Act, 1945 (RSC 1952, c. 253) re-established the Solicitor General as a Cabinet fficer and provided that "the Solicitor General shall assist the Minister of Justice in the Counsel ork of the Department of Justice, and shall be charged with such other duties as are at any time ssigned to him by the Governor-in-Council". This legislation was repealed by the Government rganization Act, 1966 (SC 1966, c. 25), which created a new Department of the Solicitor General nd assigned to the Solicitor General of Canada responsibility for the Royal Canadian Mounted olice and the Canadian Penitentiary Service. The Solicitor General also reports to Parliament or the National Parole Board, which is an independent agency. With this new legislation, the olicitor General of Canada becomes the Cabinet Minister with primary responsibility in the ields of correction and law enforcement.

Department of Supply and Services.—The Department of Supply and Services was estab-ished on Apr. 1, 1969 by the Government Organization Act, 1969, as a result of recommendations of he Royal Commission on Government Organization stressing the need for the Federal Government o foster efficiency and effect economies wherever possible. The Minister of Supply and Services is he Receiver General for Canada and exercises all the duties, powers and functions assigned to the Receiver General by law.

The Department is organized into two major administrations, each headed by a Deputy Minister directly responsible to the Minister. The Supply administration is composed of the former Department of Defence Production, the former Department of Public Printing and Stationery, and components of the Shipbuilding Branch of the Department of Transport. The Services administra-ion encompasses the former Office of the Comptroller of the Treasury, together with the Central Data Processing Service Bureau from the Treasury Board, the Bureau of Management Consulting rom the Public Service Commission and the Central Personnel Records System from the Dominion Bureau of Statistics.

The Supply administration has the primary function of purchasing, at minimum cost, the goods nd services required by federal departments and agencies, and of maintaining Federal Government equipment. Purchasing offices are located in 11 cities across Canada and in London, England, and Koblenz, Germany, and equipment maintenance centres are located in six cities across the country. The Supply administration also administers the Canadian Government Printing Bureau, which is

responsible for providing the printing services required by Parliament and by federal departmen and agencies. The main plant is located at Hull, Que., and printing units to meet local requiremen of departments where there is need for fast service of a short-run nature are located within the Nation Capital Region and in several cities and National Defence Bases throughout Canada.

The Services administration, acting for the Receiver General, provides payment or chequ issuing services on behalf of all federal departments, maintains the fiscal accounts of Canada a prepares the public accounts. It offers departments and agencies a broad range of management a advisory services in management consulting, auditing and computer services fields. It also provid for all departments administrative services in connection with pay, pensions and other employ benefit plans, together with financial management reports and statistical information related to cheque-issuing function. Services functions are carried out through approximately 60 regional a district offices throughout Canada and abroad.

The Minister of Supply and Services reports to Parliament for Polymer Corporation Limite Canadian Commercial Corporation, Canadian Arsenals Limited, Crown Assets Disposal Corpo tion and the Royal Canadian Mint.

Ministry of Transport.—The role and structure of the former Department of Transport we changed and a Ministry was created Feb. 17, 1970. The new Ministry is a corporate structure Crown corporations and operating administrations having varying degrees of autonomy, togeth with separate agencies for development and economic regulation. A ministry headquarters st supports the Minister and Deputy Minister in the functions of planning, policy formulation and asse ment of program achievements in terms of the objectives of the Ministry.

The *Canadian Marine Transportation Administration* will co-ordinate the functions of the S Lawrence Seaway Authority, the National Harbours Board and the Marine Services component the former Department of Transport. Its operations include management of the St. Lawrence Se way through the St. Lawrence Seaway Authority; direct supervision of eight harbours and oth facilities through the National Harbours Board; 300 public harbours and 11 others administered commissions under the supervision of the Ministry. It also is responsible for aids to navigati nautical and pilotage services, marine agencies, steamship inspection and the Canadian Coast Guar

The *Canadian Air Transportation Administration* operates Canada's airways and federal airpo through its branches of Civil Aviation, Telecommunications and Electronics, Construction Engine ing and Architectural, Airports and Field Operations, Planning Research and Development, a Air Traffic Control. It is also charged with the responsibility for the technical supervision of aeronautical activities in the flight safety sense and provides Air Traffic Control as well as teleco munications and flight services to other components of the Ministry.

The *Canadian Meteorological Service* provides meteorological service and ice information in sponse to the need of a broad spectrum of segments of the national economy and promotes the appli tion and development of meteorological services.

The *Canadian Surface Transportation Administration* brings together those elements of the form Department of Transport dealing with the programming and planning for federal participation in t operation and co-ordination of highway, rail and ferry transportation.

The *Arctic Transportation Agency* is in the process of being organized for effective liaison wi the Department of Indian Affairs and Northern Development and other interests within the Ter tories, to co-ordinate transportation functions to respond to the special needs of the Arctic and maintain general liaison with such bodies interested in the solution of transportation problems the Canadian North.

The *Transportation Development Agency* is responsible for developing and co-ordinating tec nological research, working closely with government agencies and the academic and scientific co munity to provide the national focus for changing technology and development in the field of tra portation.

The Ministry also includes Air Canada, Canadian National Railways, and Northern Transpo tation Company Limited. The latter was previously responsible to the Minister of Indian Affa and Northern Development. These three Crown corporations are autonomous, maintaining close co sultation with the Minister to be consistent with the Government's general policies in the field transportation. The Minister of Transport also reports to Parliament for the Canadian Transpo Commission.

Tariff Board.—Constituted in 1931, the Board derives its duties and powers from three statut the Tariff Board Act (RSC 1952, c. 261, as amended); the Customs Act (RSC 1952, c. 58, amended); and the Excise Tax Act (RSC 1952, c. 100, as amended).

Under the Tariff Board Act, the Board makes inquiry into and reports upon any matter relation to goods that, if brought into Canada, are subject to or exempt from customs duties excise taxes. Reports of the Board are tabled in Parliament by the Minister of Finance. It also the duty of the Board to hold an inquiry under Sect. 14 of the Customs Tariff and to inqui into any other matter in relation to the trade and commerce of Canada that the Governor in Coun sees fit to refer to the Board.

Under the provisions of the Customs Act, the Excise Tax Act and the Anti-dumping Act, the Tariff Board acts as a court to hear appeals from rulings of the Department of National Revenue Customs and Excise Division, in respect of excise taxes, tariff classification, value for duty, and drawback of customs duties. Declarations of the Board on appeals on questions of fact are final and conclusive but the Acts contain provisions for appeal on questions of law to the Exchequer Court of Canada.

Tax Appeal Board.—The Tax Appeal Board (created in 1949 as the Income Tax Appeal Board) now operates under the Income Tax Act (RSC 1952, c. 148, as amended). The Board is declared by statute to be a court of record and has jurisdiction to hear and determine appeals by taxpayers against their assessment under the Income Tax Act and also appeals under the Estate Tax Act. An appeal lies from the Board to the Exchequer Court of Canada and a further appeal from that court to the Supreme Court of Canada. The Board consists of a chairman, an assistant chairman and four other members. Its offices are located at Ottawa and it hears appeals at the principal centres throughout Canada approximately twice a year and at the main centres, such as Montreal and Toronto, six times a year. The Board is under the jurisdiction of the Minister of National Revenue but is independent of the Department of National Revenue.

Treasury Board.—The Treasury Board was first established as a committee of the Queen's Privy Council for Canada by Order in Council PC 3 of July 2, 1867, and was made a statutory committee in 1869. The Minister of Finance was appointed Chairman of the Board, with four other Privy Councillors to be designated as members by the Governor in Council. The Secretary of the Board and the members of his staff were employed by the Department of Finance.

By the Government Organization Act, 1966 (SC 1966, c. 25) the Board Secretariat was established as a separate department of government with its own Minister, the President of the Treasury Board. The committee constituting the Treasury Board includes, in addition to the President, the Minister of Finance and four other Privy Councillors.

Amendments to the Financial Administration Act (RSC 1952, c. 116), passed in 1966, defined more clearly the Treasury Board's responsibilities as the central management agency of government. These responsibilities include expenditure control, including allocation of resources among departments and agencies of government; management of the personnel function in the Public Service; and improvement in the efficiency of management and administration in the Public Service.

The staff of the Treasury Board is divided into three Branches: the Planning Branch is responsible for the development and application of systems and procedures for evaluating the effectiveness and efficiency of programs and projects and for providing advice and planning assistance for organizational change in government; the Personnel Policy Branch is responsible for the classification of positions, the rates of pay, conditions of employment and for representing the Government in collective bargaining with bargaining agents representing employees in the Public Service; and the Program Branch is responsible for such matters as the financial management functions of short- and long-range expenditure forecasting, program analysis, expenditure control and estimates preparation, and the development and administration of policies, systems and methods for the management of real property, materiel and common services.

Department of Veterans Affairs.—This Department, established in 1944 (RSC 1952, c. 80), is concerned exclusively with the welfare of veterans and with the dependants of veterans and of those who died on active service. The Department provides treatment services (hospital, medical, dental and prosthetic), welfare services, education assistance, life insurance, and land settlement and home construction assistance. The Veterans' Bureau assists veterans in the preparation and presentation of pension claims.

The Canadian Pension Commission established by the Pension Act (RSC 1952, c. 207), and the War Veterans Allowance Board established by the War Veterans Allowance Act (RSC 1952, c. 340) also report to Parliament through the Minister of Veterans Affairs.

The Department has treatment institutions and facilities in a number of urban centres. It also maintains, in large cities across Canada, administrative offices, which are shared with the Canadian Pension Commission and the War Veterans Allowance Board, and an office in London, England.

War Veterans Allowance Board.—This Board, established under the authority of the War Veterans Allowance Act, 1930 (RSC 1952, c. 340, as amended) is a quasi-judicial body consisting of ten members including a chairman and a deputy-chairman, appointed by the Governor in Council. The Board administers the War Veterans Allowance Act and Part XI of the Civilian War Pensions and Allowances Act. It reports to Parliament through the Minister of Veterans Affairs. Its functions include the responsibility of ensuring that the 19 District Authorities, located in various regions throughout Canada, interpret the legislation in a fair, reasonable and equitable manner. It is also an appeal body which may consider the appeal of an appellant against the decision of a District Authority.

Section 3.—Crown Corporations

During the past quarter century, as the work of government has become more comple greater reliance than formerly has been placed on the Crown corporation type of organiza tion as the appropriate instrument for administering and managing many public service in which business enterprise and public accountability must be combined.

The use of the corporate device to harmonize public responsibility in the developmer of economic resources and the provision of public services with the pursuit of commercia and industrial objectives has led to the adoption of many different forms and formula of management. The most usual practice has been to set up a corporation under th provisions of a special Act of Parliament which defines its purposes and sets forth its powe and responsibilities. However, during World War II the Minister of Munitions an Supply was authorized to procure the incorporation of companies under the federal Com panies Act, 1934, or under any provincial Companies Act to which he might delegate an of the powers conferred on him under the Department of Munitions and Supply Act c any Order in Council. Under this legislation about 28 companies were created to serve wide variety of purposes; most of these companies have since been wound up.

Following the successful experience during the war years in relying on the Companie Act for the establishment of Crown companies, similar incorporating powers were grante by an amendment to the Research Council Act and have been incorporated in the Atomi Energy Control and the Defence Production Acts.

In 1946 the Government Companies Operation Act was passed to regulate the opera tion of companies formed under the Companies Act. However, it was applicable only t a relatively small number of companies and, in order to establish a more uniform syste of financial and budgetary control and of accounting, auditing and reporting for Crow corporations generally, Part VIII of the Financial Administration Act was enacted i 1951 and brought into operation by proclamation on Oct. 1, 1952. Upon its enactmer the financial provisions of the Government Companies Operation Act were repealed.

One of the more interesting features of the later legislation is the attempt that ha been made to define and classify Crown corporations. The Act defines a Crown corpora tion as a corporation that is ultimately accountable, through a Minister, to Parliament fo the conduct of its affairs and establishes three classes of corporation—departmenta agency and proprietary.

Departmental Corporations.—A departmental corporation is defined as a Crow corporation that is a servant or agent of Her Majesty in right of Canada and is responsib for administrative, supervisory or regulatory services of a governmental nature. Th following departmental corporations are listed in Schedule B to the Financial Administra tion Act:—

Agricultural Stabilization Board
Atomic Energy Control Board
Director of Soldier Settlement
The Director, The Veterans' Land Act
Economic Council of Canada
Fisheries Prices Support Board
Municipal Development and Loan Board
National Museums of Canada
National Research Council
Unemployment Insurance Commission.

Agency Corporations.—An agency corporation is defined as a Crown corporatio that is an agent of Her Majesty in right of Canada and is responsible for the manageme of trading or service operations on a quasi-commercial basis or for the management

ocurement, construction or disposal activities on behalf of Her Majesty in right of anada. The following agency corporations are listed in Schedule C to the Financial dministration Act:—

Atomic Energy of Canada Limited
Canadian Arsenals Limited
Canadian Commercial Corporation
Canadian Dairy Commission
Canadian Livestock Feed Board
Canadian National (West Indies) Steamships Limited (virtually inoperative)
Canadian Patents and Development Limited
Centennial Commission
Crown Assets Disposal Corporation
Defence Construction (1951) Limited
National Battlefields Commission
National Capital Commission
National Harbours Board
Northern Canada Power Commission
Royal Canadian Mint.

Proprietary Corporations.—A proprietary corporation is defined as a Crown corporaon that (1) is responsible for the management of lending or financial operations, or for e management of commercial or industrial operations involving the production of or ealing in goods and the supplying of services to the public, and (2) is ordinarily required conduct its operations without parliamentary appropriations. The following proietary corporations are listed in Schedule D to the Act:—

Air Canada
Canada Deposit Insurance Corporation
Canadian Broadcasting Corporation
Canadian Overseas Telecommunication Corporation
Cape Breton Development Corporation
Central Mortgage and Housing Corporation
Eldorado Aviation Limited
Eldorado Nuclear Limited
Export Development Corporation
Farm Credit Corporation
Freshwater Fish Marketing Corporation
National Railways, as defined in the Canadian National–Canadian Pacific Act, 1933
Northern Transportation Company Limited
Polymer Corporation Limited
St. Lawrence Seaway Authority
Seaway International Bridge Corporation Limited (formerly Cornwall International Bridge Company Limited), subsidiary to the St. Lawrence Seaway Authority.

Departmental corporations are governed by the provisions of the Financial Adminiration Act that are applicable to departments generally. Agency and proprietary corprations, however, are subject to the provisions of the Crown corporations Part of the ct, although, if there is any inconsistency between the provisions of that Part and those any other Act applicable to a corporation, the Act provides that the latter prevail. here is provision in the Part for the control and regulation of such matters as corporation udgets and bank accounts, the turning over to the Receiver General of surplus money, mited loans for working-capital purposes, the awarding of contracts and the establishment reserves, the keeping and auditing of accounts, and the preparation of financial statements nd reports and their submission to Parliament through the appropriate Minister.

A further form of control is exercised by Parliament through the power to vot financial assistance. This may take different forms. For some corporations, capital may be provided by parliamentary grants, loans or advances that may subsequently be con verted into capital stock or bonds; for others it may be by the issue of capital stock t be subscribed and paid for by the Government; or by the sale of bonds to either the Govern ment or the public. A few corporations have financed all or a portion of their requirement from their own resources or earnings.

Prior to 1952, Crown corporations did not pay corporate income taxes. However, th Income Tax Act was later amended so that, in respect of financial years commencing afte Jan. 1, 1952, proprietary Crown corporations pay taxes on income earned in the sam manner as any privately owned corporation. One desirable result of this amendment i that the financial statements of these Crown companies are now more comparable wit those of private industry, with which in some instances they are in competition, and thu it is easier to assess the relative efficiency of their operations. Crown corporations are als liable for the payment of provincial retail sales taxes, gasoline or motor vehicle fuel taxe and motor vehicle fees in terms of the Crown Corporations (Provincial Taxes and Fees Act of 1964.

Unclassified Corporations.—Not all Crown corporations are subject to the provisions o the Financial Administration Act. For example, the Canadian Wheat Board, the Bank o Canada and its subsidiary the Industrial Development Bank, because of the special natur of their functions, are excluded from operations of the Crown corporations Part of the Ac and are governed by their own Acts of incorporation as is also the Eastern Rockie Forest Conservation Board, a joint federal-provincial enterprise. The Canada Counci was set up under the Canada Council Act (assented to Mar. 28, 1957) as a Crown corpora tion but has been declared not an agency of the Crown and hence is not included in th Schedules to the Financial Administration Act; the same situation applies to the Scienc Council of Canada (assented to May 12, 1966), the Company of Young Canadians (assente to July 11, 1966) and the National Arts Centre Corporation (assented to July 15, 1966)

Agricultural Stabilization Board.—The Board was established in 1958 (SC 1957–58, c. 2 to administer the provisions of the Agricultural Stabilization Act. The Board reports to Parlia ment through the Minister of Agriculture and routine administrative matters are handled throug departmental channels.

Air Canada.—Formerly Trans-Canada Air Lines, the corporation was incorporated by Ac of Parliament in 1937 to provide a publicly owned air transportation service, with powers to carr on its business throughout Canada and outside of Canada. Air Canada now maintains passenge mail and commodity traffic services over nation-wide routes and also services to the United State England, Scotland, Ireland, Belgium, France, Switzerland, West Germany, Austria, Denmark, th Soviet Union, Czechoslovakia, Bermuda, the Bahamas, Jamaica, Antigua, Barbados and Trinidad Air Canada is responsible to Parliament through the Minister of Transport.

Atomic Energy Control Board.—By Act of Parliament (RSC 1952, c. 11) proclaimed Octobe 1946, the regulation and control of atomic energy in Canada was placed under the Atomic Energ Control Board. The Board reports to Parliament through the Minister of Energy, Mines an Resources.

Atomic Energy of Canada Limited.—This Crown company was incorporated in Februar 1952 under the Atomic Energy Control Act, 1946 (RSC 1952, c. 11) to take over from the Nationa Research Council on Apr. 1, 1952 the operation of the Chalk River project. The main activities the company are (*a*) the development of economic nuclear power, (*b*) scientific research and d velopment in the atomic energy field, (*c*) the operation of nuclear reactors and (*d*) the productio of radioactive isotopes and associated equipment such as Cobalt-60 beam therapy units for th treatment of cancer. The company reports to Parliament through the Minister of Energy, Min and Resources.

Bank of Canada.—Legislation of 1934 (RSC 1952, c. 13, as amended by RSC 1952, c. 31 SC 1953-54, c. 33; and 1966-67, c. 88) provided for the establishment of a central bank in Canad the function of which is to regulate credit and currency, to control and protect the external value the Canadian dollar and to stabilize the level of production, trade, prices and employment as f as may be possible within the scope of monetary action. The Bank acts as the fiscal agent of th Government of Canada, manages the public debt and has the sole right to issue notes for circulatio

Canada. The Bank is managed by a Board of Directors appointed by the Government and mposed of a governor, a deputy governor and 12 directors; the Deputy Minister of Finance is o a member of the Board. The Bank reports to Parliament through the Minister of Finance.

Canada Council.—Established by Order in Council dated Apr. 15, 1957, this corporation, mposed of a chairman, a vice-chairman and 19 other members, a director and an associate director, erates under the terms of the Canada Council Act, assented to Mar. 28, 1957. The function of e Council is to encourage the arts, humanities and social sciences in Canada, mainly through broad program of fellowships and grants. Its principal sources of income are an annual grant the Canadian Government, which amounted to $23,700,000 for the year ended Mar. 31, 1970, d an Endowment Fund, originally of $50,000,000, which has an annual yield of approximately 600,000. In the making, managing and disposing of investments under the Act, the Council has e advice of an Investment Committee of five, including the chairman and another member of e Council. The proceedings of the Council are reported each year to Parliament through the cretary of State.

Canada Deposit Insurance Corporation.—The Corporation was established by legislation C 1966-67, c. 70 as amended), which received Royal Assent on Feb. 17, 1967. It is empowered insure Canadian currency deposits other than those of Canada, up to $20,000 per person, in banks, derally incorporated trust and loan companies that accept deposits from the public, and in similar ovincially incorporated institutions that are authorized by their provincial governments to apply such insurance. The Corporation is also empowered to act as a lender of last resort for member stitutions. The Board of the Corporation comprises a chairman, appointed by the Governor in uncil, and four other directors who hold the positions of Governor of the Bank of Canada, Deputy inister of Finance, Superintendent of Insurance and Inspector General of Banks.

Canadian Arsenals Limited.—This company was established under the Companies Act by tters Patent dated Sept. 20, 1945, and is subject to the Government Companies Operation Act SC 152, c. 133) and certain provisions of the Financial Administration Act (RSC 1952, c. 116). e company was set up to take over and operate Crown-owned plants and equipment. It has tensive facilities for the manufacture of small arms and ammunition components as well as for e filling and assembly of artillery ammunition, mines, bombs, grenades, rockets and other spe- lties up to torpedo warheads. The Head Office of the Company is in Ottawa, the Small Arms ivision is at Long Branch, Ont., and the Filling Division at St. Paul l'Ermite, Que. The com- ny reports to Parliament through the Minister of Supply and Services.

Canadian Broadcasting Corporation.—The CBC functions under the Broadcasting Act, 68, which continues the Corporation as a Crown agency charged with the operation of a national oadcasting service. It has authority among other things to maintain and operate broadcasting dertakings and to originate and secure programs from within or outside Canada. Its radio and levision services are financed through Parliamentary grants, supplemented by revenues from mmercial operations. The Corporation reports to Parliament through the Secretary of State.

The Corporation consists of a president and 14 other directors appointed by the Governor Council. The President is appointed for a term not exceeding seven years and is eligible for appointment. Directors are appointed for periods not exceeding five years and may serve two nsecutive terms. The President is the chief executive officer of the Corporation. The Executive ce-President is responsible to the President for the management of broadcasting operations in cordance with policies prescribed by the Corporation.

The Corporation's Head Office is situated in Ottawa. The production centre for English rvices is located in Toronto and for French Services in Montreal. The main regional produc- n centres are in St. John's for Newfoundland, Halifax for the Maritimes, Ottawa for the Ottawa rea, Winnipeg for the Prairie Provinces, and Vancouver for British Columbia. Headquarters for e Northern and Armed Forces Services is in Ottawa. The operational centre for the CBC Inter- tional Service is in Montreal.

Canadian Commercial Corporation.—Established in 1946 by Act of Parliament, the Canadian mmercial Corporation is wholly owned by the Government of Canada. Initially it assumed the dertakings of the then Canadian Export Board covering procurement in Canada of goods and rvices on behalf of foreign governments and United Nations relief agencies. In 1947 respon- bility for procurement of the requirements of the Department of National Defence was transferred m the Department of Reconstruction and Supply to the Corporation which fulfilled these addi- nal functions until the formation of the Department of Defence Production in 1951. In 1963 the aff of the Corporation was integrated with that of the Department of Defence Production, now e Department of Supply and Services, which provides all the management and services required the Corporation.

The Corporation continues to act primarily as the Canadian Government contracting and pro- rement agency on behalf of foreign countries desirous of purchasing defence or other supplies and rvices from Canada on a government-to-government basis. It reports to Parliament through e Minister of Supply and Services.

Canadian Dairy Commission.—This Commission, which reports to Parliament through th Minister of Agriculture, was established on Dec. 2, 1966 (SC 1966, c. 34) to provide efficient produce of milk and cream with the opportunity of obtaining a fair return for their labour and investmer and to provide consumers of dairy products with a continuous and adequate supply of dairy produc of high quality. The Commission has three members appointed by the Governor in Council an operates with the advisory assistance of a nine-member Consultative Committee appointed b the Minister.

Canadian Film Development Corporation.—This Corporation, established by Act of Parli ment in March 1967 (SC 1966-67, c. 78), has the function of fostering and promoting the developmer of a feature film industry in Canada through investment in productions, loans to producers, gran to film-makers and film technicians, and advice and assistance in distribution and administrativ matters. It works in co-operation with other federal departments and agencies and with provinci departments and agencies having like interests and finances its operations from a film developmer advance account in the Consolidated Revenue Fund. The Corporation has a Government Fil Commissioner and six other members appointed by the Governor in Council for terms, initially, from three to five years and reports to Parliament through the Secretary of State.

Canadian Livestock Feed Board.—The Canadian Livestock Feed Board is a Crown corpor tion established pursuant to the Livestock Feed Assistance Act (SC 1966, c. 52). The objects the corporation are to ensure that sufficient feed grain and storage for feed grain is available to me the needs of livestock feeders and to ensure reasonable stability and fair equalization of feed gra prices in Eastern Canada and in British Columbia. Its powers include authority to make paymen related to the cost of feed grain storage and transportation costs to attain its objectives. It ma also buy, transport, store and sell feed grains in Eastern Canada and British Columbia when autho ized by the Governor in Council.

The Board consists of a chairman, a vice-chairman and two members, and it reports to Pa liament through the Minister of Agriculture. There is also an Advisory Committee made up seven members.

Canadian National Railways.—The Canadian National Railway Company was incorporat (SC 1919, c. 13) to operate and manage a national system of railways, including the Canadian Nort ern Railway System, the Canadian Government Railways and all lines entrusted to it by Ord in Council. In 1923 the Grand Trunk Railway Company of Canada was amalgamated with th Canadian National Railway Company and since 1923 a number of railway lines acquired by th Government have been entrusted to the Company for operation and management, including th Newfoundland Railway and steamship services in 1949, the Temiscouata Railway in 1950, and th Hudson Bay Railway and the Northwest Communication System in 1958. The Canadian Nation Railways Act, 1919 was repealed in 1955 and the Canadian National Railways Act (SC 1955, c. 2 substituted therefor.

The Canadian National Railway Company is controlled by a chairman and board of directo appointed by the Governor in Council, who report to Parliament through the Minister of Transpor

Canadian Overseas Telecommunication Corporation.—This Crown company was create on Jan. 1, 1950 by Act of Parliament (RSC 1952, c. 42) to acquire for public operation external tel communication assets in Canada, in keeping with the Commonwealth Telegraph Agreement sign May 11, 1948. This Agreement was designed to bring about the consolidation and strengthenir of the radio and cable communication systems of the Commonwealth. The Corporation repor to Parliament through the Minister of Communications.

Canadian Patents and Development Limited.—This Crown corporation was set up in 19 pursuant to authority granted in an amendment to the Research Council Act passed in 1946. Th purpose of the company, which is a subsidiary to the National Research Council, is to patent ar licence new products and processes that come out of NRC research, research of other governme departments and agencies, and research of Canadian universities. Proposals for patents are assesse with regard to originality, existence of similar patented products or processes, commercial appea humanitarian or scientific value, and cost of developing, promoting and marketing. CPDL in tiates and finances the development of many inventions to a stage where it is economically possib for private industry to carry them through to production and sale, thus bridging the gap betwe research and industry. Profits from inventions are used to sponsor less profitable but often mo beneficial inventions, such as highly specialized surgical or scientific instruments.

The company reports to Parliament through a designated Minister, at present a Minister wit out Portfolio.

Canadian Wheat Board.—The Board was incorporated in 1935 under the Canadian Whe Board Act to market, in an orderly manner, in the interprovincial and export trade, grain grown Canada. Its powers include authority to buy, take delivery of, store, transfer, sell, ship or othe wise dispose of grain. Except as directed by the Governor in Council, the Board was not original authorized to buy grain other than wheat but, since Aug. 1, 1949, it may also buy oats and barle

authorized to do so by Regulation approved by the Governor in Council. Only grain produced the designated area, which includes Manitoba, Saskatchewan, Alberta and parts of British olumbia and Ontario, is purchased by the Board, which controls the delivery of grain into elevators nd railway cars in that area as well as the interprovincial movement and export of wheat, oats nd barley generally. The Board reports to Parliament through a designated Minister, at present Minister without Portfolio.

Cape Breton Development Corporation.—This Corporation was created by an Act of Parliaent, assented to on July 7, 1967 (SC 1967-68, c. 6) and came into existence by proclamation on Oct. 1, 967, as a proprietary Crown corporation. The Corporation was established to promote and assist he financing and development of industry on the Island and to provide employment outside the oal producing industry to broaden the base of the economy of the Island.

The Corporation has acquired the former interests of the major coal producer in the Sydney oalfield and, in accordance with its approved plan as required by Sect. 17 of the Act, is operating nd reorganizing four mines with a view to the rationalization of coal production.

The Act provides for a board of directors, comprised of a chairman, a president and five other irectors. Head Office is located in Sydney, N.S. The Corporation now reports to Parliament hrough the Minister of Regional Economic Expansion. Its operations are financed by the Governent of Canada with some assistance from the Government of Nova Scotia for industrial developent projects. During 1969, approximately $36,000,000 was expended for all purposes.

Central Mortgage and Housing Corporation.—This Corporation was incorporated by Act of arliament (RSC 1952, c. 46) in December 1945 to administer the National Housing Acts. Under he National Housing Act, 1954 (SC 1953-54, c. 23, as amended), the Corporation insures mortgage oans made by approved lenders for new and existing housing and makes direct loans in resource ommunities and rural areas; guarantees home improvement loans made by banks, undertakes ubsidized rental housing projects and land assembly developments under federal-provincial arrangeents; offers loans and subsidies for public housing projects; makes loans for land assembly projects o be used for general residential development; makes loans to individuals or organizations for ow-rental housing projects; makes loans for students' housing and to provinces and municipalities ith provincial concurrence for sewage treatment projects designed to eliminate water and soil ollution; makes contributions and loans to provinces and municipalities for urban renewal operaions; conducts housing research; encourages urban planning and owns and manages rental housing nits including those built for war workers and veterans. The Corporation arranges for and supervises construction of housing projects on behalf of the Department of National Defence and other overnment departments and agencies. The Corporation is responsible to Parliament through a inister without Portfolio.

Company of Young Canadians.—The Act establishing this corporation (SC 1966, c. 36) as assented to on July 11, 1966 and was amended by SC 1969, c. 5. The corporation consists of a ouncil of the Company and persons who are officers, employees and volunteer-members of the ompany. The Council has not more than nine members and not less than seven members apointed by the Governor in Council. Terms of office for members of the Council will not exceed hree years. The objects of the Company are to support, encourage and develop programs for social, conomic and community development in Canada through voluntary service. The corporation eports to Parliament through the Secretary of State.

Crown Assets Disposal Corporation.—This Corporation was established in 1944 as the War ssets Corporation under the Surplus Crown Assets Act (RSC 1952, c. 260) and is subject to the inancial Administration Act (RSC 1952, c. 116). It replaced the War Assets Corporation Limited hich had been incorporated in 1943 and its name was changed to Crown Assets Disposal Corporaon in 1949. The Corporation is responsible for the sale of Federal Government surplus real estate nd commodities located in Canada and at Canadian Government establishments throughout the orld. It also acts as agent on behalf of foreign governments in selling their surplus assets located n Canada and has reciprocal agreements with a number of European countries for marketing anadian surplus assets located in their respective countries. The Corporation is responsible to arliament through the Minister of Supply and Services.

Defence Construction (1951) Limited.—Defence Construction (1951) Limited, reporting to he Minister of National Defence, is the Crown agency that procures for the Department of National Defence the construction and repair of buildings, structures and engineering works and professional ngineering and architectural services.

The forerunner of the present company, Defence Construction Limited, began operation in November 1950 as a Crown agency responsible for awarding and supervising defence construction rojects. Defence Construction (1951) Limited, incorporated July 12, 1951, under authority of the Defence Production Act, took over the responsibilities of the former agency. The company reorted to the Minister of Trade and Commerce until Apr. 1, 1951, and from that date until Apr. 22, 965 it reported to the Minister of Defence Production; it is now under the control and supervision f the Minister of National Defence.

The company's prime responsibility in contracting for all new construction and repair and renova tion projects (except contracts under $10,000 which are arranged for the Department of Nation Defence via the Department of Supply and Services) includes: participation in preparation of desig calling and reviewing of tenders; award and administration of contracts; supervision of constructio work; and certification of progress claims for work completed. Activities cover four distinc spheres: defence projects in Canada for the Department of National Defence; all defence project in Europe for the Department of National Defence under the North Atlantic Treaty Organizati Agreement; defence construction for the United States Government in Canada; and, by arrang ment, acting as the contract agents or technical advisers on the rendering of assistance to othe federal departments and agencies.

The head office of the agency is located at Ottawa and branch offices are maintained at Halifa Montreal, Toronto, Winnipeg and Vancouver in Canada and in Lahr, Germany.

Director of Soldier Settlement and Director of the Veterans' Land Act.—The Director Soldier Settlement (under the Act of 1919) is also the Director of the Veterans' Land Act, and each capacity is legally a corporation sole. For administrative purposes, however, the program carried on under both Acts constitute integral parts of the services provided by the Departmen of Veterans Affairs.

Eastern Rockies Forest Conservation Board.—The Board was appointed in 1947 under th Eastern Rocky Mountain Forest Conservation Act which authorized an agreement between th Government of Canada and the Province of Alberta relating to the protection and conservation the forests of that portion of the eastern slope of the Rocky Mountains which gives rise to the maj tributaries of the Saskatchewan River. Its function is to determine the policy necessary to obtai the greatest possible flow of water in the Saskatchewan River system. The planning of programs forest use and conservation is a joint duty of the Board and the provincial Forest Service; the admin stration of the conservation area is a function of the province. In April 1962, a Technical Co-ordina ing Committee for Watershed Research was established to undertake study of the related nee defined by the Board. The Committee's programs, undertaken by seven co-operating agencies the Federal and Alberta Governments, are co-ordinated by an officer of the federal Department Fisheries and Forestry.

Funds for capital expenditures during the first seven years of the agreement were provided b the Federal Government with maintenance expenditures being paid by the Province of Alberta In 1955 the province undertook the responsibility of financing both capital improvements and mai tenance work. Currently, one member of the three-man Board is appointed by the Federal Go ernment and the province has the right to appoint two members. The choice of one of the thre members as Board chairman is vested in the province. The Board reports to Parliament throug the Minister of Fisheries and Forestry.

Economic Council of Canada.—This corporation, established under legislation passed Aug. 2, 1963 (SC 1963, c. 11), consists of a full-time chairman and two full-time directors appointe for a term not to exceed seven years and not more than 25 additional members to serve part-tim and without remuneration. The Council is to be as representative as possible of labour, agricultu and primary industries, secondary industry and commerce, and the general public. Its functio are to advise and recommend measures that will achieve in Canada the highest possible levels employment and efficient production so that the country may enjoy a high and consistent rate economic growth and that all Canadians may share in rising living standards; to carry on the duti of the former National Productivity Council which were to promote and expedite continuing im provement in productive efficiency in the various aspects of Canadian economic activity; and t publish an annual review of medium- and long-term economic prospects and problems. The Counc reports to Parliament through the Prime Minister.

Eldorado Aviation Limited.—This company was incorporated Apr. 23, 1953 to carry a traffic, both passenger and freight, for Eldorado Nuclear Limited and its wholly owned subsidiary Northern Transportation Company Limited. It reports to Parliament through the Minister Energy, Mines and Resources.

Eldorado Nuclear Limited.—Set up in 1944 under the name of Eldorado Mining and Refinin (1944) Limited (the date was omitted in June 1952 and the name changed in 1968), the company business is the mining and refining of uranium and the production of nuclear fuels in Canada. Th company has also entered into contracts for the purchase of uranium concentrates from private pr ducers in Canada. It reports to Parliament through the Minister of Energy, Mines and Resource

Export Development Corporation.—This Corporation, under authority of the Export Develo ment Act (SC 1968-69, c. 39), succeeded the 25-year-old Export Credits Insurance Corporation Oct. 1, 1969. Its purpose is to facilitate the development of Canada's export trade by the provisio of expanded insurance, guarantee, loan and other financial facilities which enable Canadian firm

o meet international credit competition. It reports to Parliament through the Minister of Industry, Trade and Commerce. Its affairs are administered by a 12-man board of directors. The chairman and seven other directors are appointed from among persons employed in the Public Service f Canada, the remaining four from private business. The Corporation's functions are: to insure Canadian exporters against non-payment by foreign buyers due to credit or political risks over which either buyer nor seller has any control; to issue guarantees to persons in respect of the financing of xports; to make loans to foreign buyers or to issue guarantees in respect of the purchase of capital oods or major services from Canada involving extended credit terms; and to insure Canadian nvestments abroad against non-commercial risks such as war or revolution, expropriation or conscation, or the inability to repatriate capital or earnings.

Farm Credit Corporation.—This Corporation was established on Oct. 5, 1959 (SC 1959, c. 43) or the purpose of providing for the extension of long-term mortgage credit to farmers. The Corporaion also administers the Farm Machinery Syndicates Credit Act and is responsible to Parliament hrough the Minister of Agriculture.

Fisheries Prices Support Board.—The Board was set up under the Fisheries Prices Support Act of 1944 (RSC 1952, c. 120) to recommend to the Government price support measures when evere price declines occur. The Board functions under the direction of the Minister of Fisheries nd Forestry and consists of a chairman, who is a senior officer of the Department of Fisheries and Forestry, and five members chosen from private and co-operative firms in the industry. The Board has authority to buy fish products and to sell or otherwise dispose of them or to pay producers he difference between a price prescribed by the Board and the average price the product actually ommands.

Freshwater Fish Marketing Corporation.—This Corporation was established under the Freshwater Fish Marketing Act (SC 1968-69, c. 21) which received Royal Assent on Feb. 27, 1969, nd given the function of marketing and trading in fish, fish products and fish by-products in and ut of Canada with the objective of ensuring more orderly marketing for the benefit of the whole ishery and achieving higher and more stable prices for the catch. The Corporation received a rant for initial operating and establishment expenses but will conduct its operations on a self-sustaining basis without parliamentary appropriations; it is financed by bank loans with government guarantee of repayment or by direct loans. The Corporation consists of a board of directors comosed of a chairman, a president, one director for each participating province and four other directors ppointed by the Governor in Council for a term not exceeding five years. The Corporation reports o Parliament through the Minister of Fisheries and Forestry.

Industrial Development Bank.—The Bank, a subsidiary of the Bank of Canada, was incorporated in 1944 to supplement the activities of other lenders with particular consideration to the financing problems of small enterprises.

Medical Research Council.—Established by authority of the Government Organization Act, 969, the Council is an autonomous agency of the Federal Government. It is composed of a president, vice-president, and 20 members. The primary aim of the Council is the support and development f research in the health sciences in Canadian universities and affiliated institutions. It reports o Parliament through the Minister of National Health and Welfare.

National Arts Centre Corporation.—The Act establishing this Corporation (SC 1966, c. 48) was assented to July 15, 1966. The Corporation consists of a Board of Trustees composed of a chairman, a vice-chairman, the Mayors of Ottawa and Hull, the Director of the Canada Council, he President of the Canadian Broadcasting Corporation, the Government Film Commissioner nd nine other members appointed by the Governor in Council for terms not exceeding three years, xcept for the first appointees whose terms range from two to four years. The objects of the Corporation are to operate and maintain the National Arts Centre, to develop the performing arts in he National Capital Region and to assist the Canada Council in the development of the performing rts elsewhere in Canada. The Corporation reports to Parliament through the Secretary of State.

National Battlefields Commission.—This Commission was established by Act of Parliament in 1908 to preserve the Historic Battlefields at Quebec City. The Commission is composed f nine members, seven appointed by the Federal Government and one each by the Provinces of Ontario and Quebec. The Commission is supported by annual appropriations of the Federal Government and is responsible to Parliament through the Minister of Indian Affairs and Northern Development.

National Capital Commission.—This Commission, a successor to the Federal District Commission, is a Crown agency created by the National Capital Act (SC 1958, c. 37), proclaimed Feb. , 1959. Headed by a chairman, it is made up of 20 members, representing the 10 provinces of Canada, and its work force fluctuates between 600 and 850, depending on the season.

The Commission is responsible for the acquisition, development and maintenance of publi lands in the National Capital Region; it co-operates with municipalities by providing planning ai or financial assistance in municipal projects of benefit to the region; and advises the Departmen of Public Works on the siting and appearance of all Federal Government buildings in the 1,800-sc mile National Capital Region. The Commission reports to Parliament through the Ministe of Regional Economic Expansion.

National Harbours Board.—The Board was established by Act of Parliament in 1936. It i responsible for the administration of port facilities at the harbours of St. John's, Nfld.; Halifa N.S.; Saint John, N.B.; Chicoutimi, Quebec, Trois-Rivières and Montreal, Que.; Vancouver, B.C and Churchill, Man.; the Jacques Cartier and Champlain Bridges at Montreal, Que.; and the grai elevators at Prescott and Port Colborne, Ont. The Board reports to Parliament through th Minister of Transport.

National Museums of Canada.—The National Museums of Canada is a departmental Crow corporation established Apr. 1, 1968, by the National Museums Act (SC 1967-68, c. 21). The co poration was established to join under one administration the four existing museum activities: th National Gallery of Canada; the National Museum of Man (including the Canadian War Museum the National Museum of Natural Sciences; and the National Museum of Science and Technolog (including the National Aeronautical Collection). The corporation reports to Parliament throug the Secretary of State.

The Board of Trustees is composed of the Director of the Canada Council, the President of th National Research Council, and 10 other members. All members of the Board are appointed b the Governor in Council for fixed terms of office.

The purposes of the corporation, according to the Act, are "to demonstrate the products c nature and the works of man, with special but not exclusive reference to Canada, so as to promot interest therein throughout Canada and to disseminate knowledge thereof". To these ends th corporation is empowered to: (a) collect, classify, preserve and display objects relevant to its pu poses; (b) undertake or sponsor research relevant to its purposes; (c) arrange for and sponsor trave ling exhibitions of materials in, or related to, its collections; (d) arrange for the publication or acqu sition and the sale to the public of books, pamphlets, replicas and other materials related to it purposes; (e) undertake or sponsor programs for the training of persons in the professions and skill involved in the operation of museums; (f) arrange for or provide professional and technical servic to other organizations whose purposes are similar to any of those of the corporation on such term and conditions as may be approved by the Minister; and (g) generally, do and authorize such thing as are incidental or conducive to the attainment of the purposes of the corporation and the exercis of its powers.

National Research Council of Canada.—This is an agency of the Canadian Governmer established in 1916 to promote scientific and industrial research. The Council operates scienc and engineering laboratories in Ottawa, Halifax and Saskatoon; gives direct financial support t research carried out in Canadian university and industrial laboratories; sponsors associate com mittees co-ordinating research on specific problems of national interest; and develops and mai tains the nation's primary physical standards. Other activities include the provision of fr technical information to manufacturing concerns; the publication of research journals; and repr sentation of Canada in International Scientific Unions. Patentable inventions developed in th Council's laboratories are made available for manufacture through a subsidiary company, Canadia Patents and Development Limited. The National Research Council consists of a president, thre vice-presidents, and 17 members representing Canadian universities, industry and labour. Th Council is incorporated under the Research Council Act (RSC 1952, c. 239, as amended) and report to Parliament through a designated Minister, at present a Minister without Portfolio.

Northern Canada Power Commission.—The Commission was established by Act of Parli ment in 1948 (RSC 1952, c. 196) to provide power to points in the Northwest Territories where need developed and where power could be supplied on a self-sustaining basis; the Act was amende in 1950 to give the Commission authority to provide similar services in the Yukon Territory. Th name of the Commission (formerly the Northwest Territories Power Commission) was change in 1956. It is composed of the Deputy Minister of Indian Affairs and Northern Developmen who is chairman, and two members appointed by the Governor in Council and reports to Parliamer through the Minister of Indian Affairs and Northern Development.

The Commission operates three hydro-electric plants in the Northwest Territories (two on th Snare River near Yellowknife and one on the Taltson River near Fort Smith) and two hydro plan in the Yukon Territory (one on the Yukon River at Whitehorse and the other on the Mayo Riv near Mayo). Diesel-electric plants and distribution systems are operated at Fort Smith, Fo Simpson, Fort Resolution and Cambridge Bay, N.W.T., at Dawson, Y.T., and at Field, B.C diesel-electric power and central heating plants at Inuvik and Frobisher Bay, N.W.T., and a

oose Factory, Ont.; and water supply and sewerage systems at Inuvik and Moose Factory. The ommission also operates in the Northwest Territories, on behalf of the Department, diesel-electric ants at Fort McPherson and Aklavik, and heating plants and domestic water supply and sewerage stems at Fort McPherson and Fort Simpson.

Northern Transportation Company Limited.—This Company was incorporated in 1947 der the title of Northern Transportation Company (1947) Limited, the date being omitted from e name in 1952. Previously a Company chartered under an Alberta statute, it has been a wholly ned subsidiary of Eldorado Mining and Refining Limited since that Crown company was estab- hed and carries out the business of a common carrier in the Mackenzie River watershed and stern Arctic. The Company is responsible to Parliament through the Minister of Transport.

Polymer Corporation Limited.—This Corporation was incorporated in 1942 by Letters Patent d is subject to the Government Companies Operation Act (RSC 1952, c. 133) and the Financial dministration Act (RSC 1952, c. 116). Its head office and main plant are located at Sarnia, Ont., here it produces synthetic rubbers, latices, resins and related products. A subsidiary operation r the production of butyl is located in Belgium, and another subsidiary in France is responsible r production of general purpose and specialty rubbers for the European market. An international arketing subsidiary is located in Switzerland. The Company reports to Parliament through e Minister of Supply and Services.

Royal Canadian Mint.—The Royal Canadian Mint has been in operation since 1908. It as first established as a branch of the Royal Mint under the (Imperial) Coinage Act of 1870, and ened on Jan. 2, 1908. On Dec. 1, 1931, it became the Royal Canadian Mint and operated as a anch of the Department of Finance. In 1969, under the Government Organization Act (SC 68-69, c. 27), the Mint became a Crown agency corporation, reporting to Parliament through e Minister of Supply and Services.

The latter change was made to provide for a more industrial type of organization and for flexi- lity in producing coins of Canada and other countries; buying, selling, melting, assaying and fining gold and other precious metals; and producing medals, plaques and other devices. The int has a seven-man Board of Directors appointed by the Governor in Council—the Master of e Mint who is its chief executive officer appointed to serve during pleasure, the Chairman who appointed for a four-year period subject to re-appointment, and five other Directors, two from side and three from outside the Public Service, who are appointed for terms of one to three years. he Mint now operates basically as a manufacturing enterprise, with the object of making a small ofit. Financial requirements are provided through loans from the Consolidated Revenue Fund.

Science Council of Canada.—The Act establishing the Science Council of Canada (SC 1966, 19) received assent on May 12, 1966. The Council consists of 25 members each having a specialized terest in science or technology and four associate members chosen from among officers or em- oyees of the Federal Government. Members hold office for not more than three years and as- ciate members hold office during pleasure. All are appointed by the Governor in Council. The ties of the Science Council are to assess in a comprehensive manner Canada's scientific and tech- logical resources, requirements and potentialities and to make recommendations thereon. The ouncil reports to Parliament through the Prime Minister.

St. Lawrence Seaway Authority.—The St. Lawrence Seaway Authority was established y Act of Parliament in 1951 (RSC 1952, c. 242) and came into force by proclamation on July 1, 54. The Authority was incorporated for the purposes of constructing, maintaining and operating such works as may be necessary to provide and maintain, either wholly in Canada or in con- nction with works undertaken by an appropriate authority in the United States, a deep waterway etween the Port of Montreal and Lake Erie. The Crown corporation, Seaway International ridge Corporation Limited, is subsidiary to the St. Lawrence Seaway Authority. The Authority composed of a president, a vice president and a member, and reports to Parliament through the inister of Transport.

Unemployment Insurance Commission.—The Commission was established under the pro- sions of the Unemployment Insurance Act, 1940, now the Unemployment Insurance Act, 1955 C 1955, c. 50). It is responsible for the administration of the Unemployment Insurance Act and r such other duties and responsibilities as the Governor in Council, on the recommendations of e Minister of Labour, requires. Its general functions are to provide for the compulsory insurance employed persons with certain exceptions and, subject to regulations, to provide such persons ith weekly payments for limited periods if they become unemployed.

The Commission has three commissioners, one of whom is the chief commissioner, and operates three levels—a head office in Ottawa, five regional offices, and a number of area offices across e country. It reports to Parliament through the Minister of Labour.

Section 4.—Acts Administered by Federal Departments*

List of the Principal Acts of Parliament Administered by Departments of th Government of Canada

NOTE.—Copies of individual Acts of Parliament may be obtained from Information Canada, Ottawa, at price of 25 cents and up, according to number of pages. Where duplications of certain Acts appear in the list, parts of thes Acts are administered by the Departments given.

Department, Year and Chapter of Statute	Name of Act
Agriculture—	
RSC 1952 4	Agricultural Products Board
5	Agricultural Products Co-operative Marketing
6	Agricultural Products Marketing
9	Animal Contagious Diseases
22, 305	Canada Dairy Products
25, 308	Canada Grain
47	Cheese and Cheese Factory Improvement
52, 313	Cold Storage
66	Department of Agriculture
81	Destructive Insect and Pest
101	Experimental Farm Stations
126	Fruit, Vegetables and Honey
141	Hay and Straw Inspection
155	Inspection and Sale
167	Live Stock and Live Stock Products
168	Live Stock Pedigree
172	Maple Products Industry
177	Meat and Canned Foods
180	Milk Test
209	Pest Control Products
213	Prairie Farm Assistance
294	Wheat Co-operative Marketing
1955 27	Canada Agricultural Products Standards
36	Meat Inspection
1957 27	Fertilizers
1957-58 22	Agricultural Stabilization
1959 35	Seeds
42	Crop Insurance
43	Farm Credit (amended 1960-61, c. 36, 1962-63, c. 7 and 1964, c. 12)
44	Humane Slaughter of Food Animals
1960 14	Feeds
1964-65 29	Farm Machinery Syndicates Credit
1966-67 34	Canadian Dairy Commission
52	Livestock Feed Assistance
Auditor General—	
RSC 1952 116	Financial Administration
Communications—	
RSC 1952 42	Canadian Overseas Telecommunication Corporation
233	Radio
234	Railway
262	Telegraphs
1969 28	Government Organization (Pt. II)
51	Telesat Canada
Consumer and Corporate Affairs—	
1947 24	Trading with the Enemy (Transitional Powers)
RSC 1952 14	Bankruptcy
18	Boards of Trade
53	Canada Corporations
Consumer and Corporate Affairs— concluded	
RSC 1952 54	Companies Creditors Arrangemer
55	Copyright
94	Electricity Inspection
111	Farmers' Creditors Arrangement
129	Gas Inspection
150	Industrial Design and Union Lab
191	National Trade Mark and Tru Labelling
203	Patent
208	Pension Fund Societies
215	Precious Metals Marking
265	Timber Marking
267	Trade Unions
292	Weights and Measures
296	Winding-Up (Pt. I)
314	Combines Investigation
315	Currency, Mint and Exchange Fun (Sect. 19)
1952-53 49	Trade Marks
1962 26	Corporations and Labour Unio Returns (Pt. III, Sect. 13, amended)
1967-68 16	Department of Consumer and Co porate Affairs
Energy, Mines and Resources—	
RSC 1952 11	Atomic Energy Control
26	Canada Lands Surveys (exce Pt. III)
34	Canadian Coal Equality
73	Resources and Technical Survey
86	Dominion Coal Board
95	Emergency Gold Mining Assistan
102	Explosives
173	Coal Production Assistance
1952-53 21	Canada Water Conservation Assis ance
1955 47	International River Improvemen
1959 46	National Energy Board
External Affairs—	
1911 28	Respecting the Internation Boundary Waters Treaty a the existence of the Internation Joint Commission (amend 1914, c. 5, and 1922, c. 43)
1948 71	Carrying into effect the Treati of Peace between Canada a Italy, Romania, Hungary a Finland
1952 50	Carrying into effect the Treaty Peace between Canada and Jap
RSC 1952 68	Department of External Affairs
122	Food and Agriculture Organizati of the United Nations
142	High Commissioner in the Unit Kingdom

*Compiled from information supplied by the respective departments.

st of the Principal Acts of Parliament Administered by Departments of the Government of Canada—continued

Department, Year and Chapter of Statute			Name of Act
ternal Affairs—			
oncluded			
SC	1952	218	Privileges and Immunities (NATO)
		219	Privileges and Immunities (United Nations) (amended by Privileges and Immunities International Organization Act, SC 1965, c. 47)
		275	United Nations
	1953-54	54	Diplomatic Immunities (Commonwealth Countries)
	1964-65	19	Roosevelt Campobello International Park Commission
		22	Territorial Sea and Fishing Zones
nance—			
			Appropriation (Annual)
			Canadian National Railways Financing and Guarantee (Annual)
SC	1952	13	Bank of Canada
		15	Bills of Exchange
		19	Bretton Woods Agreements
		82	Diplomatic Service (Special) Superannuation
		110	Farm Improvement Loans
		116	Financial Administration
		131	Gold Export
		151, 326	Industrial Development Bank
		156	Interest
		182	Municipal Grants
		183	Municipal Improvements Assistance
		204	Pawnbrokers
		221	Provincial Subsidies
		245	Satisfied Securities
		261, 336	Tariff Board
		278	Veterans Business and Professional Loans
		296	Winding-Up
		315	Currency, Mint and Exchange Fund
	1952-53	47	Public Service Superannuation
	1953-54	28	Fire Losses Replacement Account
	1955	12	Members of Parliament Retiring Allowances
		31	Canadian National Railways Refunding
		46	Fisheries Improvement Loans
	1956	1	Prairie Grain Producers Interim Financing
		2	Temporary Wheat Reserves
		29	Federal-Provincial Tax Sharing Arrangements
	1957-58	26	Beechwood Power Project
	1959	32	Public Service Pension Adjustment
	1960	1	Prairie Grain Loans
		32	International Development Association
	1960-61	5	Small Businesses Loans
	1963	13	Municipal Development and Loan
	1964-65	24	Canada Student Loans
		54	Established Programs Interim Arrangements
	1966-67	70	Canada Deposit Insurance Corporation
		81	Governor General Retiring Annuity
		87	Bank
		89	Federal-Provincial Fiscal Arrangements 1967
		93	Quebec Savings Banks

Department, Year and Chapter of Statute			Name of Act
Fisheries and Forestry—			
RSC	1927	72	Fish Inspection
RSC	1952	61	Deep Sea Fisheries
		69	Department of Fisheries
		119	Fisheries
		120	Fisheries Prices Support
		121	Fisheries Research Board
		177	Meat and Canned Foods
		193	Navigable Waters Protection
		194	Northern Pacific Halibut Fishery (Convention)
		244	Salt Fish Board
		293	Whaling Convention
	1952-53	15	Coastal Fisheries Protection
		44	North Pacific Fisheries Convention
	1953-54	18	Northwest Atlantic Fisheries Convention
	1955	34	Great Lakes Fisheries Convention
	1957	11	Pacific Salmon Fisheries Convention
		31	Pacific Fur Seals Convention
	1964	22	Territorial Sea and Fishing Zones
	1966-67	18	Fisheries Development
Indian Affairs and Northern Development—			
	1908	57, 58	National Battlefields at Quebec
RSC	1927	87	Seed Grain
		88	Seed Grain Sureties
	1932	55	Waterton-Glacier International Peace Park
RSC	1952	26	Canada Lands Surveys (Pt. III)
		128	Game Export
		149	Indian
		162	Land Titles
		179	Migratory Birds Convention
		189	National Parks
		192	National Wildlife Week
		196	Northern Canada Power Commission
		224	Public Lands Grants
		263	Territorial Lands
		300	Yukon Placer Mining
		301	Yukon Quartz Mining
		331	Northwest Territories
	1952-53	39	Historic Sites and Monuments
		53	Yukon
	1969	48	Oil and Gas Production and Conservation
Industry, Trade and Commerce—			
	1948	257	Statistics
	1953-54	27	Export and Import Permits
	1960-61	24	National Design Council
	1962	26	Corporations and Labour Unions Returns
	1966-67	82	Industrial Research and Development Incentives
	1969	28	Government Organization (Pt. III)
	1969	39	Export Development Corporation
Insurance—			
RSC	1952	31	Canadian and British Insurance Companies
		49	Civil Service Insurance
		70	Department of Insurance

List of the Principal Acts of Parliament Administered by Departments of the Government of Canada—continued

Department, Year and Chapter of Statute	Name of Act
Insurance—concl.	
RSC 1952 100	Excise Tax (Pt. I)
125	Foreign Insurance Companies
170	Loan Companies
251	Small Loans
272	Trust Companies
296	Winding-Up (Pt. III)
1952-53 28	Co-operative Credit Associations
1966-67 92	Pension Benefits Standards
Justice—	
1940 43	Treachery
RSC 1952 1	Admiralty
28	Canada Prize
71	Department of Justice
97	Escheats
98	Exchequer Court
106	Expropriation
116	Financial Administration
127	Fugitive Offenders
144	Identification of Criminals
154	Inquiries
158	Interpretation
159	Judges
160	Juvenile Delinquents
171	Lord's Day
198	Official Secrets
210	Petition of Right
234	Railway
259, 335	Supreme Court
266	Tobacco Restraint
299	Yukon Administration of Justice
307	Canada Evidence
322	Extradition
1952-53 30	Crown Liability
1953-54 51	Criminal Code
1960 44	Canadian Bill of Rights
1960-61 35	Narcotic Control
1968 24	Divorce
Labour—	
RSC 1927 110	Conciliation and Labour
RSC 1952 72	Department of Labour
108	Fair Wages and Hours of Labour
132	Government Annuities
134, 323	Government Employees Compensation
152	Industrial Relations and Disputes Investigation
178	Merchant Seamen Compensation
295	White Phosphorous Matches
1952-53 19	Canada Fair Employment Practices
1955 50	Unemployment Insurance
1956 38	Female Employees Equal Pay
1964-65 38	Canada Labour (Standards) Code
1966-67 62	Canada Labour (Safety) Code
Manpower and Immigration—	
1946 236	Reinstatement in Civil Employment
1952 325	Immigration
1955 50	Unemployment Insurance (Pt. II, Sect. 21)
1961 26	Vocational Rehabilitation of Disabled Persons
1966-67 27	Training Allowance
1966-67 94	Adult Occupational Training
1967 13	Canada Manpower and Immigration Council

Department, Year and Chapter of Statute	Name of Act
National Defence—	
RSC 1952 184	National Defence
1959 21	Canadian Forces Superannuation
1967 23	Visiting Forces
National Health and Welfare—	
RSC 1952 17	Blind Persons
29	Canada Shipping (Pt. V, Sick Mariners and Marine Hospitals)
74	Department of National Health and Welfare
109	Family Allowances
165	Leprosy
199	Old Age Assistance
200	Old Age Security
220	Proprietary or Patent Medicine
229	Public Works Health
231	Quarantine
1952-53 38	Food and Drugs
1953-54 55	Disabled Persons
1956 26	Unemployment Assistance
1957 28	Hospital Insurance and Diagnostic Services
1958 30	Excise Tax, Sect. 47
1960-61 35	Narcotic Control
59	Fitness and Amateur Sport
1964-65 23	Youth Allowances
51	Canada Pension Plan
54	Established Programs (Interim Arrangements)
1966-67 42	Health Resources Fund
45	Canada Assistance Plan
64	Medical Care
National Library—	
SC 1968-69 47	National Library
Public Archives—	
RSC 1952 163	Laurier House
222	Public Archives
Public Works—	
RSC 1952 91	Dry Docks Subsidies
106	Expropriation (in part)
135	Government Harbours and Piers (Sect. 5)
138	Government Works Tolls
161	Kingsmere Park (in part)
163	Laurier House
187	National Harbours Board (Sect. 38, in part)
216	Prime Minister's Residence
228	Public Works
234	Railway (Sect. 251)
269	Trans-Canada Highway
324	Government Property Traffic (in part)
1959 46	National Energy Board (Sect. 76)
Regional Economic Expansion—	
1952 175	Maritime Marshland Rehabilitation
RSC 1952 214	Prairie Farm Rehabilitation (amended 1955, c. 39)
1957-58 25	Atlantic Provinces Power Development
1961 30	Agriculture and Rural Development
1965 12	Area Development Incentives
1968-69 56	Regional Development Incentives
1969 28	Government Organization (Pt. IV)

List of the Principal Acts of Parliament Administered by Departments of the Government of Canada—concluded

Department, Year and Chapter of Statute	Name of Act
Secretary of State—	
RSC 1952 30	Canada Temperance
33	Canadian Citizenship (amended 1952-53, c. 23; 1953-54, c. 34; 1956, c. 6; 1958, c. 24; and 1967-68, c. 64)
77	Department of State (amended 1966, c. 25)
270	Translation Bureau
1966–67 89	Federal-Provincial Fiscal Arrangements
1968–69 54	Official Languages
Solicitor General of Canada—	
RSC 1952 217	Prisons and Reformatories
241	Royal Canadian Mounted Police Pension Continuation
1958 38	Parole
1959 34	Royal Canadian Mounted Police Superannuation
54	Royal Canadian Mounted Police
1960–61 53	Penitentiary
Supply and Services—	
RSC 1952 35	Canadian Commercial Corporation
62	Defence Production
260	Surplus Crown Assets
1968–69 28	Royal Canadian Mint
Transport—	
	Auditors for National Railways (Annual)
	Canadian National Railways Financing and Guarantee (Annual)
1907 22	Intercolonial Railway and Prince Edward Island Railway Employees Provident Fund
1911 26	Toronto Harbour Commissioners
1912 55	Winnipeg and St. Boniface Harbour Commissioners
98	Hamilton Harbour Commissioners
1913 162	North Fraser Harbour Commissioners
1922 50	Trenton Harbour
1927 29	Canadian National Steamships
1929 12	Canadian National Montreal Terminals
1947 42	Port Alberni Harbour Commissioners
1952 34	Belleville Harbour Commissioners
RSC 1952 2, 302	Aeronautics
16	Bills of Lading
29	Canada Shipping
39	Canadian National–Canadian Pacific
43	Canadian Vessel Construction Assistance
45	Carriage of Goods by Air
79	Department of Transport
135	Government Harbours and Piers
136	Government Railways
137	Government Vessels Discipline
169	Live Stock Shipping
174	Maritime Freight Rates
187	National Harbours Board
193	Navigable Waters Protection
202	Passenger Tickets

Department, Year and Chapter of Statute	Name of Act
Transport—concl.	
RSC 1952 234	Railway (except telecommunications undertakings, facilities system and services)
242	St. Lawrence Seaway Authority
268	Trans-Canada Air Lines (Air Canada by 1964, c. 2)
271	Transport
291	Water Carriage of Goods
1953–54 59	Motor Vehicle Transport
1955 15	Foreign Aircraft Third Party Damage
29	Canadian National Railways
1960 26	Canadian National Toronto Terminals
1964 32	Harbour Commissions
1966–67 69	National Transportation
1967–68 22	Teleferry
1968–69 52	Atlantic Region Freight Assistance
1969–70 30	Motor Vehicle Safety
Veterans Affairs—	
1920 54	Returned Soldiers' Insurance (as amended)
RSC 1927 188	Soldier Settlement (as amended)
RSC 1952 8	Allied Veterans Benefits
51, 312	Civilian War Pensions and Allowances (amended 1962, c. 11; 1967, c. 96; 1967–68, c. 8) (Sects. I to X, Canadian Pension Commission); (Sect. XI, War Veterans Allowance Board)
80	Department of Veterans Affairs (1967, c. 96)
117	Fire Fighters War Service Benefits
207, 332	Pension (amended 1953–54, c. 62; 1957–58, c. 19; 1960–61, c. 10; 1964–65, c. 34; 1966, c. 55; 1967, c. 96; 1967–68, c. 34) (Canadian Pension Commission)
256	Special Operators War Service Benefits
258	Supervisors War Service Benefits
279, 338	Veterans Insurance (amended 1958, c. 43; 1962, c. 6; 1967, c. 96)
280	Veterans' Land (amended 1953–54, c. 66; 1959, c. 37; 1962, c. 29; 1965, c. 19; 1966–67, c. 25; 1967–68, c. 8; 1968–69, c. 22)
281	Veterans Rehabilitation (amended 1959, c. 17)
289	War Service Grants (amended 1953–54, c. 46; 1959, c. 18; 1962, c. 7)
297	Women's Royal Naval Services and the South African Military Nursing Service (Benefits)
340	War Veterans Allowance (amended 1955, c. 13; 1957–58, c. 7; 1960, c. 36; 1960–61, c. 39; 1964–65, c. 34; 1965, c. 20; 1966, c. 55) (War Veterans Allowance Board)
1952–53 27	Children of War Dead (Education Assistance) (amended 1953–54, c. 2; 1958, c. 25; 1962, c. 10; 1965, c. 15; 1969–70, c. 14)
1953–54 65	Veterans Benefit (amended 1955, c. 43)

PART IV.—FEDERAL AND PROVINCIAL GOVERNMENT EMPLOYMENT

Federal Government Employment

The former Civil Service Commission became the Public Service Commission with the proclamation of the Public Service Employment Act on Mar. 13, 1967. Under this Act the Commission retains its status as an independent body responsible to Parliament for the appointment of qualified persons to or from within the Public Service and for the operation of staff training and development programs. It may establish boards to consider appeals against selections for appointments made from within the Public Service, to make recommendations on the delegation of its authority, and to inquire into allegations of political partisanship. The Commission's jurisdiction is extended to include a number of persons not covered by the former Civil Service Act. It is also given the prerogative of making extensive delegation of its authority to deputy heads to perform any of its powers, functions or duties, except those relating to appeals.

Under the amended Financial Administration Act and the Public Service Staff Relations Act, both of which were also proclaimed on Mar. 13, 1967, the Treasury Board is made responsible for the development of regulations, policies and standards governing all other aspects of personnel management in the Public Service including classification and pay, conditions of employment, collective bargaining and staff relations, organization and establishments, manpower development and utilization, and pensions and other employee benefits.

Manpower.—Treasury Board is concerned with the development, implementation, maintenance and evaluation of policies, programs and procedures directed toward the accurate determination, allocation, development and efficient utilization of employees needed in the Public Service to carry out programs effectively. These measures are aimed at improving the effective use of manpower resources in the Public Service and include recommendations on manpower planning, the determination of training needs and educational programs, and advice to departments and agencies on the design and implementation of systems to achieve improvements in manpower management.

Classification.—The Treasury Board develops and maintains classification systems and standards for the 73 occupational groups into which the Public Service is divided. Classification standards contain criteria for measuring the relative difficulty of jobs within groups of positions with like functions. One of the objectives of the new classification system which is substantially but not yet fully in place, is the extensive delegation of authority to departments to classify positions in order to strengthen the management process in departments and contribute to more accurate and expeditious classification decisions. Historically, both the responsibility for and the actual administration of classification has been done by central agencies but, under a program of progressive delegation, the Treasury Board has now granted authority to most departments to classify their own positions without reference to the Board Secretariat. The Board retains authority for the classification of jobs in key areas and, through its staff, provides classification services to small departments and agencies, monitors and audits the work of departments with delegated authority and responds to classification grievances and challenges.

Collective Bargaining.—For the purposes of the system of collective bargaining established by the Public Service Staff Relations Act, the Treasury Board is the employer for all employees in the Public Service, with the exception of a number of "separate employers", such as the National Research Council, the Defence Research Board and the National Film Board. The Treasury Board determines policies designed to promote good relations between the Government and its employees, negotiates collective agreements with the various certified bargaining agents and administers the terms of the agreements

which have not been delegated to departments. Much of the administration of agreements is so delegated and in such cases the Board provides interpretations and advice to departments as required. The Treasury Board prepares and presents the employer position on grievances which are referred to adjudication, and gives advice and assistance to departmental management at preceding stages in the grievance process. The Board presents the employer position concerning applications for certification by employee organizations and deals with the Public Service Staff Relations Board on the exclusion of employees from bargaining units.

Compensation and Conditions.—The Treasury Board develops, administers and monitors policies governing compensation and conditions of service for the Public Service, the Canadian Armed Forces and the Royal Canadian Mounted Police. It is the principal source of technical advice required in the bargaining process with respect to Public Service employees covered by collective bargaining and is directly responsible for policy on compensation and conditions for those employees who are outside the collective bargaining system.

The compensation policies developed apply to employees in Canada as well as to those in foreign countries and embrace all forms of payment made in return for services rendered including pay, leave and allowances. These policies, developed in relation to conditions of service, include the setting of appropriate standards for physical working conditions and occupational health and safety.

Staffing.—The Public Service Commission continues to perform its important role as guardian of the merit principle while ensuring the high quality of people within the Service. Every citizen has the opportunity of competing for positions in the service of his country. Ordinarily, any Canadian citizen may apply for headquarters positions at Ottawa but applicants for local positions in the administrative support or operational categories who are residents of the locality in which the vacancy occurs are given preference. Competitive examinations are announced through the press and other news media and through posters displayed on public notice boards of the larger post offices, offices of the Canada Manpower Centres, offices of the Public Service Commission and elsewhere.

The Commission's major task—staffing the Public Service according to merit—is done on an occupational basis. This is consistent with the revised classification system that divides the Service into six broad occupational categories which are further divided into groups of occupationally similar jobs. For each major occupation or group of occupations there is a program of development, recruitment, selection and placement. The activities are operated on the basis of comprehensive manpower planning including regular appraisals of employees, planned rotation, development and continuous recruitment techniques.

The new legislation provides the flexibility needed for the revised approach to government administration whereby competent managers should be allowed to manage and should be held accountable for their decisions. To facilitate staffing under this concept of management, the Commission may delegate any of its authority, except for appeals, to deputy heads wherever practical, and they in turn may delegate this authority with the approval of the Commission. The Commission must report to Parliament on delegation and changes in this delegation.

Staffing operations for the administrative support and operational categories are decentralized to the regional and local levels.

Appointments are made from within the Service except where the Commission believes it is in the best interests of the Service to do otherwise. Selection is made by competition or other processes of personnel selection designed to establish the relative merit of the candidates.

Competitions may be open to the public and to everyone in the Public Service or they may be limited to all or to a part of the Service; the latter are referred to as closed compe-

titions. Examinations for selection may be written, oral, a demonstration of skill or any combination of these. By these techniques, qualified candidates are placed on eligible lists which are valid for periods determined by the Commission. Appointments may be made from an eligible list for positions of a similar occupational nature and level. Closed competitions for promotion are generally conducted by the departmental staffing officers under work-sharing arrangements with the Commission. The Commission remains in touch with the departments to advise and instruct them in the administration of the Public Service Employment Act and its regulations.

Other processes used for appointments include continuous staffing and appraisals. The former is used when there is a recurring demand within an occupational group or there is some specialization within a group. Applications are reviewed and candidates are called for interview. The records of those who are not immediately called or appointed are put into a manpower inventory. This inventory is reviewed when a vacancy occurs and the employees in the inventory who are best qualified for that position are considered for the appointment. Within the Service, employees are regularly appraised to determine what training and development may be needed, to plan careers, and to decide promotions or transfers on the basis of performance and qualifications.

Appeals.—Under the Act, public servants who are candidates in a competition open to all or part of the Service may appeal the results of that competition to the Public Service Commission, except where no candidate is successful. When a promotion is made without competition, those who would have been eligible to apply if a competition had been held may appeal. Public servants may also appeal a recommendation from a deputy head for their demotion or release because of incompetence or incapacity.

Training and Development.—Consistent with the growing emphasis on managerial development and continuing education, the Public Service Commission offers interdepartmental courses in government administration, occupational training and management improvement. The Commission acts as the consultant and adviser to deputy heads on training matters and the training and development facilities of the Commission are available to employees to train them for specific occupations or for promotion within the administrative and managerial ranks.

Language.—The Public Service Commission has responsibilities concerning the requirements for bilingualism and biculturalism in the Public Service. It operates language training schools and carries out research and development to achieve various levels of proficiency needed by public servants. It is developing bilingual skills of senior executives so they may perform their duties effectively in either English or French. The program for this development gives these executives a sufficient appreciation of English and French cultures so they may use this understanding when developing and carrying out policy. The Commission also provides departments and agencies with advice and monitors the way in which language-usage policy is put to use.

Statistics of Federal Government Employment*

The current monthly survey of Federal Government employment, started in 1952, covers all employees of the Government of Canada; employees in this sense exclude the Governor General and Lieutenant-Governors, Ministers of the Crown and Members of Parliament, judges, persons under contract and members of the Armed Forces, but include Force members of the Royal Canadian Mounted Police. The survey is divided into two main categories: (1) departments and departmental corporations, and (2) agency and proprietary corporations and other agencies. Table 1 combines the two groups; Tables 2 to 5 cover employees in the first category and Table 6 covers employees in the second category.

* Prepared in the Governments Division, Financial Statistics Branch, Dominion Bureau of Statistics.

1.—Total Federal Government Employees, by Province, as at Mar. 31, 1969, and Payrolls for the Year Ended Mar. 31, 1969

Item and Province or Territory	Departments and Departmental Corporations	Agency Corporations	Proprietary Corporations	Other Agencies	Total
	No.	No.	No.	No.	No.
Employees—					
Newfoundland	4,146	11	5,788	9	9,954
Prince Edward Island	1,283	—	834	—	2,117
Nova Scotia	14,335	274	9,977	53	24,639
New Brunswick	7,602	105	6,799	40	14,546
Quebec	38,429	2,112	31,623	381	72,545
Ontario	103,120	5,879	33,233	1,324	143,556
Manitoba	11,099	326	12,510	556	24,491
Saskatchewan	8,372	1	6,337	61	14,771
Alberta	14,866	50	3,884	101	18,901
British Columbia	23,018	220	6,450	157	29,845
Yukon and Northwest Territories[1]	2,674	257	69	—	3,000
Abroad	3,918	11	8,894	9	12,832
Totals, Employees	**232,862**	**9,246**	**126,398**	**2,691**	**371,197**
	$'000	$'000	$'000	$'000	$'000
Totals, Payrolls	**2,506,123**	**66,651**	**926,851**	**18,808**	**3,518,433**

[1] Excludes a number of Canadian National Railways employees not separable from other provincial totals.

2.—Employees in Departments and Departmental Corporations of the Federal Government, by Province, as at Mar. 31, 1969

Province or Territory	Salaried	Prevailing Rate	Ships' Officers and Crews	Casuals and Others	Total
	No.	No.	No.	No.	No.
Newfoundland and Labrador	3,199	404	317	226	4,146
Prince Edward Island	827	219	119	118	1,283
Nova Scotia	8,517	3,229	1,126	1,463	14,335
New Brunswick	5,763	1,066	157	616	7,602
Quebec	30,673	4,417	665	2,674	38,429
Ontario	86,044	7,644	246	9,186	103,120
Manitoba	8,819	1,362	15	903	11,099
Saskatchewan	7,010	569	—	793	8,372
Alberta	11,497	1,963	18	1,388	14,866
British Columbia	17,340	2,652	875	2,151	23,018
Yukon and Northwest Territories	1,851	362	36	425	2,674
Abroad	3,656	—	—	262	3,918
Canada	**185,196**	**23,887**	**3,574**	**20,205**	**232,862**

Departments and Departmental Corporations.—The salaries of employees in this group are paid from the Consolidated Revenue Fund. Definitions of classifications are as follows. "Salaried" employees include all persons paid on the basis of an annual salary rate with the exception of ships' officers who, although paid an annual salary rate, are subject to special treatment under the regulations made pertaining to the Financial Administration Act. The salaried staff are employed in departments and departmental corporations which are subject to regulation by the Treasury Board and for which the positions are outlined in the *Estimates of Canada*, or are established by means of supplementary Treasury Board Minutes. Thus, this category of employees includes persons subject to the provisions of the Public Service Employment Act plus salaried persons employed on the staffs of Cabinet Ministers and appointed by statute or by Order in Council, and also the salaried staffs of certain administrative branches of the Government that do not fall under the jurisdiction of the Public Service Employment Act.

"Prevailing Rate" employees are those who occupy continuing positions that ar subject to prevailing rate regulations and are therefore paid on the basis of standard wag rates for similar work in the area in which the individual is employed; these employees ar subject to the provisions of the Public Service Employment Act. Regulations mad under authority of the Financial Administration Act govern the third group entitle "Ships' Officers and Crews".

These three groups comprise what may be called the "regular" employees of th government service. "Casuals and Others" are principally persons employed on a non continuing basis.

3.—Employees in Departments and Departmental Corporations and Payrolls, by Month, April 1968 to March 1969

NOTE.—Excludes agency and proprietary corporations and other agencies, figures for which are given in Table 6.

Month	Salaried	Prevailing Rate	Ships' Officers and Crews	Casuals and Others	Total
	EMPLOYEES AT END OF EACH MONTH				
	No.	No.	No.	No.	No.
April 1968	..	..	..	..	..
May	..	..	..	..	..
June	191,815	18,249	3,916	25,239	239,219
July	190,800	17,512	4,033	25,556	237,901
August	191,349	18,114	4,144	24,214	237,821
September	191,972	18,290	4,015	20,117	234,394
October	191,677	18,243	3,856	18,381	232,157
November	190,469	18,487	3,793	18,218	230,967
December	190,524	18,463	3,581	17,586	230,154
January 1969	187,294	21,613	3,546	18,739	231,192
February	184,478	23,593	3,538	19,435	231,044
March	185,196	23,887	3,574	20,205	232,862
	REGULAR PAYROLLS				
	$'000	$'000	$'000	$'000	$'000
June 1968[1]	296,541	19,593	4,424	21,398	341,955
July	100,435	6,555	1,618	7,788	116,396
August	100,537	6,834	1,663	7,645	116,679
September	101,264	6,689	1,586	6,124	115,663
October	102,651	6,965	1,504	5,577	116,697
November	102,029	7,243	1,626	5,315	116,213
December	102,619	7,625	1,497	5,282	117,023
January 1969	102,591	9,174	1,431	5,505	118,701
February	102,288	10,040	1,415	5,563	119,306
March	102,080	10,412	1,512	6,031	120,035
	OVERTIME PAYMENTS REPORTED				
	$'000	$'000	$'000	$'000	$'000
June 1968[1]	7,332	717	568	323	8,939
July	1,737	271	276	186	2,470
August	1,618	237	383	202	2,440
September	2,243	203	401	180	3,026
October	2,684	233	269	133	3,319
November	2,217	233	432	109	2,991
December	3,265	336	276	70	3,947
January 1969	4,069	211	232	56	4,568
February	2,874	196	164	43	3,277
March	2,984	73	136	54	3,248
	RETROACTIVE PAYMENTS REPORTED				
	$'000	$'000	$'000	$'000	$'000
June 1968[1]	403	10	2	136	551
July	—	—	36	7	43
August	—	1	—	2	3
September	950	7	—	60	1,017
October	647	153	23	516	1,339
November	4,769	788	116	75	5,748
December	16,824	4,760	111	329	22,024
January 1969	4,335	1,879	32	444	6,690
February	10,505	4,227	157	810	15,699
March	2,454	1,116	46	184	3,800

[1] Includes amounts for April and May; separate data were not available for those months.

4.—Federal Employees in Metropolitan Areas with Totals for Non-metropolitan Areas, by Sex, as at Sept. 30, 1968, and Payrolls for September 1968

Area	Persons Employed as at Sept. 30, 1968				Regular Payrolls, September 1968	
	Male	Female	Total	P.C. of Total	Total	P.C. of Total
	No.	No.	No.		$000	
Metropolitan Areas—						
Ottawa, Ont.-Hull, Que.	36,037	21,453	57,490	24.5	32,601	28.2
Montreal, Que.	20,343	6,003	26,346	11.2	17,221	14.9
Toronto, Ont.	14,761	4,684	19,445	8.3	16,087	13.9
Vancouver, B.C.	7,346	3,940	11,286	4.8	5,562	4.8
Halifax, N.S.	7,828	1,915	9,743	4.2	4,362	3.8
Winnipeg, Man.	4,860	1,823	6,683	2.9	4,622	4.0
Victoria, B.C.	4,296	1,225	5,521	2.3	2,624	2.3
Edmonton, Alta.	3,678	1,685	5,363	2.3	2,545	2.2
Quebec, Que.	3,936	1,040	4,976	2.1	2,565	2.2
London, Ont.	2,621	2,217	4,838	2.1	2,379	2.1
Calgary, Alta.	2,415	1,020	3,435	1.5	1,642	1.4
St. John's, Nfld.	1,693	312	2,005	0.9	989	0.9
Saint John, N.B.	1,248	606	1,854	0.8	727	0.6
Windsor, Ont.	1,104	600	1,704	0.7	726	0.6
Regina, Sask.	1,167	499	1,666	0.7	824	0.7
Hamilton, Ont.	1,176	310	1,486	0.6	698	0.6
Saskatoon, Sask.	1,123	305	1,428	0.6	742	0.6
Kitchener-Waterloo, Ont.	619	190	809	0.3	413	0.4
Sudbury, Ont.	318	177	495	0.2	248	0.2
Non-metropolitan Areas—						
In Canada	53,969	9,743	63,712	27.2	16,081	13.9
Outside Canada	2,370	1,739	4,109	1.8	1,975	1.7
Totals	**172,908**	**61,486**	**234,394**	**100.0**	**115,633**	**100.0**
	p.c.	p.c.	p.c.		p.c.	
Proportion in—						
Metropolitan areas	67.4	81.3	71.0	...	84.4	...
Non-metropolitan areas—						
In Canada	31.2	15.9	27.2	...	13.9	...
Outside Canada	1.4	2.8	1.8	...	1.7	...

Table 5 presents statistics for departments and departmental corporations on the basis of a classification by function. The purpose of such classification is to supply a means of studying the operation of government without the complication that results from differences in administrative establishment. This analysis is useful in three ways. First, it permits a detailed study of employment by the Government of Canada according to the main purposes or functions and, since these functions are not subject to the periodic changes that alter the administrative structure of the Government, it is possible to develop a statistical series which, with minor exceptions, is consistent over an extended period of time. Secondly, since differences in administrative establishment are eliminated, it is possible to make meaningful comparisons between Federal Government expenditures on employment and similar expenditures by other levels of government. Thirdly, an analysis of the relationship between expenditures on employment and total expenditures may be made with regard to each function. Monthly figures on both the functional and departmental bases are available in DBS publication *Federal Government Employment* (Cat. No. 72-004).

5.—Departments and Departmental Corporations classified by Function, Persons Employed as at Mar. 31, 1969, and Regular Payrolls[1] for the Year Ended Mar. 31, 1969

NOTE.—Excludes agency and proprietary corporations and other agencies, figures for which are given in summary form in Table 6.

Function	Salaried		Prevailing Rate		Ships' Officers and Crews		Casuals and Others		Totals	
	Employees	Regular Payrolls	Employees	Regular Payrolls	Employees	Regular Payrolls	Employees	Regular Payrolls	Employees	Regular Payrolls
	No.	$	No.	$	No.	$	No.	$	No.	$
General Government Services—										
Executive and administrative	28,481	185,517,659	2,487	10,139,960	29	165,014	4,672	8,070,397	35,669	203,893,030
Legislative	1,427	8,116,609	28	90,418	—	—	5	163,976	1,460	8,371,003
Research, planning and statistics	3,182	20,853,574	..	4,166	—	—	840	2,194,640	4,022	23,052,380
Other	383	3,299,634	—	—	—	—	—	—	383	3,299,634
Protection of Persons and Property—										
Law enforcement	439	3,770,416	—	—	—	—	—	—	439	3,770,416
Corrections	4,398	26,217,795	—	—	—	—	12	61,467	4,410	26,279,262
Police	10,969	75,629,053	216	739,591	—	—	1,687	1,235,502	12,872	77,604,146
Other	1,701	12,293,335	—	—	—	—	27	170,613	1,728	12,463,948
Transportation and Communications—										
Air	4,398	34,108,604	995	5,484,046	—	467	331	2,224,443	5,724	41,817,560
Road	37	236,795	156	1,045,467	—	—	118	1,205,523	311	2,487,785
Water	2,491	17,232,085	485	2,715,294	2,488	12,668,276	721	4,339,656	6,185	36,955,311
Telecommunications	2,973	19,493,505	15	69,409	—	—	91	503,137	3,079	20,066,051
Other	967	7,443,684	—	—	—	—	29	89,148	996	7,532,832
Health—										
Hospital care	2,291	13,511,286	262	696,131	—	—	397	1,172,916	2,950	15,380,333
General health	501	3,647,426	5	21,380	—	—	40	197,275	546	3,866,081
Public health	1,475	11,665,491	61	213,551	—	—	71	244,575	1,607	12,123,617
Social Welfare—										
Aid to unemployed and unemployable	4,413	27,592,512	..	6,207	—	—	805	2,122,747	5,218	29,721,466
Labour	1,325	9,505,695	—	—	—	—	167	616,440	1,492	10,122,135
Employment services	6,553	42,755,118	5	39,471	—	—	187	1,254,377	6,745	44,048,966
Adult training and re-training	18	180,570	—	—	—	—	—	5,598	18	186,168
Other social welfare	3,273	19,996,383	—	38,274	—	18,651	560	1,646,812	3,833	21,700,120

Recreational and Cultural Services—										
Archives, art galleries, museums and libraries	710	4,631,469	22	118,342	—	—	56	216,461	788	4,966,272
Parks	1,013	6,292,505	652	3,164,268	—	—	440	1,523,900	2,105	10,980,673
Other	935	7,049,337	—	—	—	—	240	1,339,601	1,175	8,388,938
Education—										
Indian and Eskimo schools	2,213	13,974,923	—	49,843	—	2,931	—	299,835	2,213	14,327,532
Natural Resources and Primary Industries—										
Fish and game	2,114	16,060,996	87	374,734	516	2,659,677	248	1,877,675	2,965	20,973,082
Forests	1,697	12,784,655	81	459,750	—	—	87	1,010,860	1,865	14,255,265
Lands: settlement and agriculture	7,963	58,675,436	874	4,462,946	—	—	490	2,562,600	9,327	65,700,982
Minerals and mines	1,450	12,615,935	..	302,483	—	—	152	942,064	1,602	13,860,482
Water resources	661	4,705,745	8	45,347	—	—	180	691,422	849	5,442,514
Other	1,647	12,004,328	125	473,855	—	—	180	648,908	1,952	13,127,091
Trade and industrial development	2,380	20,050,865	166	1,009,807	—	—	187	736,715	2,733	21,797,387
National capital region planning and development	662	5,214,062	—	—	—	—	—	—	662	5,214,062
Defence services	22,439	152,702,015	15,557	53,285,757	541	2,746,952	3,581	24,326,950	42,118	233,061,674
Veterans' pensions and other benefits	9,255	51,949,551	1,546	5,767,790	—	—	477	1,185,425	11,278	58,902,766
Own enterprises	120	766,472	—	—	—	—	98	211,865	218	978,337
International co-operation and assistance	418	2,748,897	—	—	—	—	9	70,356	427	2,819,253
Other—										
Citizenship and immigration	1,006	5,577,321	—	—	—	—	82	221,879	1,088	5,799,200
External affairs	2,698	17,610,949	—	—	—	—	184	529,899	2,882	18,140,848
Postal services	38,906	221,047,368 [2]	23	177,344	—	—	1,997	5,017,802	40,926	226,242,514
Royal Canadian Mint	262	1,664,030	—	—	—	—	107	381,360	369	2,045,390
Emergency measures	130	1,388,914	19	73,377	—	—	—	2,635	149	1,464,926
Other	5,484	45,667,235	8	74,774	—	—	650	4,908,643	6,142	50,650,652
Totals	**185,858**	**1,218,250,237** [3]	**23,887** [4]	**91,143,782**	**3,574**	**18,261,968**	**20,205**	**76,226,097**	**233,524** [4]	**1,403,882,084**

[1] In some instances an amount is shown for payrolls with no employees; this results from seasonal employment that terminated before Mar. 31. [2] Excludes payments of $19,865,007 from postal revenues to approximately 8,095 postmasters and assistant postmasters. [3] Excludes payments to the Governor General and Lieutenant-Governors amounting to $230,664; judges $9,425,838; and Ministers of the Crown (including the Prime Minister, Speakers of the Senate and House of Commons, Deputy Speaker of the House of Commons and Parliamentary Secretaries) $450,176. [4] Includes four employees excluded from the function analyses.

Agency and Proprietary Corporations and Other Agencies.—The following organizations owned by the Federal Government as at Mar. 31, 1969 are included under this heading. Employees and earnings are shown by month in Table 6; a provincial distribution of employees and a summary of the total payroll in each of the three groups is given in Table 1, p. 169.

Agency Corporations

Atomic Energy of Canada Limited
Canadian Arsenals Limited
Canadian Dairy Commission
Canadian Film Development Corporation
Canadian Livestock Feed Board
Crown Assets Disposal Corporation
Defence Construction (1951) Limited
National Battlefields Commission
National Capital Commission
National Harbours Board
Northern Canada Power Commission

Proprietary Corporations

Air Canada
Canada Deposit Insurance Corporation
Canadian Broadcasting Corporation
Canadian National Railways
Canadian Overseas Telecommunications Corporation
Cape Breton Development Corporation
Central Mortgage and Housing Corporation
Eldorado Aviation Limited
Eldorado Nuclear Limited
Export Credits Insurance Corporation
Farm Credit Corporation
Northern Transportation Company Limited
Polymer Corporation Limited
St. Lawrence Seaway Authority
Seaway International Bridge Corporation Limited

Other Agencies

Bank of Canada
Canadian Corporation for the 1967 World Exhibition
Canadian Wheat Board
Industrial Development Bank
Office of the Custodian of Enemy Property
National Arts Centre

6.—Employees and Payrolls in Agency and Proprietary Corporations and Other Agencies, by Month, Years Ended Mar. 31, 1968 and 1969

Month	1967-68		1968-69	
	Employees	Payrolls	Employees	Payrolls
	No.	$'000	No.	$'000
April	147,142	79,672	133,328	93,135
May	153,256	82,351	135,116	75,256
June	159,537	85,680	141,642	80,099
July	162,736	87,146	145,082	81,724
August	162,272	86,993	146,670	81,745
September	159,147	86,629	144,869	86,749
October	153,061	87,953	141,113	101,672
November	144,170	79,736	139,539	81,842
December	138,688	79,354	138,813	80,500
January	136,067	76,255	138,036	81,685
February	134,307	73,869	137,592	80,727
March	133,915	77,735	138,335	87,175

Provincial Government Employment

Table 7 shows the numbers of persons employed by the various provincial and territorial governments, with the exception of British Columbia, in the month of December 1969, and gross payrolls (including retroactive pay, salary adjustments and overtime) for the year 1969. The only data available for British Columbia are for employees of institutions of higher education; these are included in the body of the table but not in the totals, all of which are, of course, exclusive of that province.

Of the total 1969 provincial and territorial government payrolls of $2,110,392,000 (excluding British Columbia), departmental services employees received 60 p.c., employees of institutions of higher education 10.6 p.c., employees of provincial government enterprises 28.2 p.c. and employees of workmen's compensation boards 1.2 p.c.

7.—Provincial Government Employment and Payrolls, for Dec. 31, 1969

Province or Territory and Item	Departmental Services	Provincial Institutions of Higher Education	Provincial Government Enterprises	Workmen's Compensation Boards	Total
Newfoundland—					
Employees ..... No.	9,574	1,359	943	63	11,939
Gross payrolls ..... $ '000	48,213	6,992	4,834	320	60,359
Prince Edward Island—					
Employees ..... No.	2,729	—	77	15	2,821
Gross payrolls ..... $ '000	10,457	—	312	69	10,838
Nova Scotia—					
Employees ..... No.	15,100	—	4,596	85	19,781
Gross payrolls ..... $ '000	61,807	—	31,870	524	94,201
New Brunswick—					
Employees ..... No.	9,072	1,215	2,264	73	12,624
Gross payrolls ..... $ '000	46,835	8,062	14,659	439	69,995
Quebec—					
Employees ..... No.	54,477	—	17,599	1,255	73,331
Gross payrolls ..... $ '000	338,741	—	139,788	7,209	485,738
Ontario—					
Employees ..... No.	69,566	16,566	28,920	1,582	116,634
Gross payrolls ..... $ '000	480,746	94,300	251,077	11,962	838,085
Manitoba—					
Employees ..... No.	11,085	5,368	7,961	119	24,533
Gross payrolls ..... $ '000	68,006	27,087	55,384	738	151,215
Saskatchewan—					
Employees ..... No.	10,762	5,199	6,771	135	22,867
Gross payrolls ..... $ '000	67,973	30,432	42,930	854	142,189
Alberta—					
Employees ..... No.	22,493	11,078	9,218	497	43,286
Gross payrolls ..... $ '000	131,544	56,058	54,807	3,249	245,658
British Columbia—					
Employees ..... No.	..	8,139[1]	..	..	..
Gross payrolls ..... $ '000	..	44,758[1]	..	..	..
Yukon and Northwest Territories—					
Employees ..... No.	1,826	—	70	—	1,896
Gross payrolls ..... $ '000	11,772	—	342	—	12,114
All Provinces and Territories except British Columbia—					
Employees ..... No.	**266,684**	**40,785**	**78,419**	**3,824**	**329,712**
Gross payrolls ..... $ '000	**1,266,694**	**222,951**	**596,003**	**25,364**	**2,110,392**

[1] Omitted from totals; see preceding text.

PART V.—CANADA'S EXTERNAL RELATIONS*

Section 1.—Canada's International Status

The growth of Canada's international status is reflected in the development of the Department of External Affairs. From Confederation until 1914, Canada's position in the British Empire was essentially that of a self-governing colony, whose external relations were directed and controlled by the Imperial Government in Great Britain. Canada's first efforts concerning its own external relations, in the early 1900s, merely took the form of creating improved administrative machinery at home. In 1909, Parliament authorized the establishment of a "Department of External Affairs" placing it under the Secretary of State, with an Under-Secretary of State for External Affairs to rank as the

* Prepared (March 1970) by the Department of External Affairs, Ottawa.

permanent deputy head of the Department. The title of the Department indicated that it was to deal with Canada's relations with other governments within the British Empire as well as with foreign powers but its establishment brought no constitutional change. In 1912, the Department was placed directly under the Prime Minister who held the additional portfolio of Secretary of State for External Affairs and this situation obtained until 1946 when the first separate Secretary of State for External Affairs was appointed.

The Department began with a modest staff consisting of the Under-Secretary and six clerks. In 1912 an Assistant Under-Secretary was added, and in 1913 a Legal Adviser. Before the establishment of the Department, a High Commissioner had been appointed to represent Canada in London (from 1880) and an Agent-General in France (from 1882), and Canada, in the closing years of the nineteenth century, was also represented abroad by trade commissioners and immigration officials. However, none of these officials had diplomatic status. Negotiations with foreign countries were conducted through the British Foreign Office and dealings with other parts of the Empire through the Colonial Office, with Canadian representatives frequently included in negotiations. Canadian interests abroad were handled by British diplomatic and consular authorities and all Canadian communications to other governments were made through the Governor General.

The gradual recognition of Canadian autonomy in international affairs and the growth of Canadian responsibilities abroad made expansion of services and representation inevitable. After 1920, it became increasingly apparent that Canada's interests could no longer be conveniently handled by the British diplomatic and consular authorities and the Department began to develop into an agency for the direct administration of Canada's external affairs. In 1921, the Office of the High Commissioner in London was placed under its direct control. In 1925, a Canadian Advisory Officer was appointed in Geneva to represent Canada at various conferences and League of Nations Assemblies and to keep the Canadian Government informed of the activities of the League and of the International Labour Office. In 1927, a Canadian Minister was appointed to Washington.

An advance of the first importance in the Department's development came as a result of an agreement reached at the Imperial Conference of 1926 by which the Governor General ceased to represent the British Government and became solely the personal representative of the Sovereign. This brought about two changes: as the British Government was now without a representative in Canada, it appointed, in 1928, a High Commissioner to represent it at Ottawa; and after July 1, 1927, correspondence from the Dominions Office in London and from foreign governments was directed to the Secretary of State for External Affairs instead of to the Governor General.

In 1928, the former Agent-General in Paris was appointed Minister to France and, in 1929, a legation was opened in Tokyo. At about the same time, the United States, France and Japan opened legations in Ottawa. The expansion of the service was then interrupted by the depression of the 1930s and the next step in the exchange of diplomatic representatives with other countries was taken when Belgium sent a Minister to Ottawa in 1937 and Canada, in 1939, established legations in Belgium and The Netherlands.

With the outbreak of the Second World War, it became imperative that Canada have closer and more direct contact with other governments of the Commonwealth, with the Allied governments and with certain other foreign governments. The day after Canada's separate declaration of war on Sept. 10, 1939, it was announced that the Canadian Government would send High Commissioners to Australia, New Zealand, South Africa and Ireland, and these governments reciprocated. The appointment in 1941 of a High Commissioner to Newfoundland recognized the importance of that country to the defence of Canada. In 1941, by reciprocal agreement, Canada appointed Ministers to the Union of Soviet Socialist Republics and China. During the War, a single Canadian Minister was accredited to a number of Allied governments then functioning in London or Cairo—those of Belgium, The Netherlands, Czechoslovakia, Greece, Norway, Poland and Yugoslavia—and Canada received Ministers from each of these governments. After the liberation of France, this Minister, following a period in Algiers as representative to the French Committee of National Liberation, moved to Paris with the rank of Ambassador.

Another wartime development was the establishment of diplomatic relations with Latin merica. In 1941, Canadian legations were opened in Brazil and the Argentine Republic he Minister to the latter being also accredited in 1942 to Chile) and these countries nt their first Ministers to Ottawa. Diplomatic representatives were sent to Mexico and eru in 1944 and to Cuba in 1945. Canada now has formal diplomatic relations with all countries in Latin America and, because of developing ties with that area, a separate olitical division devoted to Latin America was set up in the Department in 1960.

Canada's external affairs services continued to expand following the War. Embassies ere opened in a number of countries and, after 1947, High Commissioners were accredited India and Pakistan and subsequently to Jamaica, Malaysia, Nigeria, Sierra Leone, anzania, Trinidad and Tobago, Uganda, Kenya and Malta.

Membership in the United Nations has increased Canada's responsibilities outside its vn borders and Canada has been represented on various organs of the UN since its rmation in San Francisco in 1945. A Permanent Canadian Delegation was established New York in 1948 and a year later a Canadian office was opened in Geneva, the European eadquarters of the organization. These offices, now called Permanent Missions, have nce been expanded. Canada was one of the founding members of the North Atlantic reaty Organization in 1949 and has been active in the Organization throughout the ears of its existence. In 1952, on the establishment of a NATO Permanent Council, a anadian Permanent Delegation was set up in Paris (since moved to Brussels) to represent anada's NATO interest. There is also in Paris a Canadian Permanent Delegation to he Organization for Economic Co-operation and Development. In addition to repre-nting Canada on these permanent international bodies and their various committees, fficials of the Department of External Affairs are members of Canadian delegations at any international conferences.

Today, Canada conducts diplomatic and/or consular relations with some 115 inde-endent countries, details of which are contained in Section 2 which follows. Canada's ain international activities from January 1969 to the end of March 1970 are reported in ection 3 of this Chapter. A brief review of the present functions and organization of the epartment of External Affairs is given on pp. 141-142; a broader coverage may be found the monthly bulletin *External Affairs* (Information Canada, Ottawa, $2 per year) and in he Annual Report of the Department.

Section 2.—Diplomatic and/or Consular Representation as at Mar. 31, 1970

1.—Canadian Representation Abroad

NOTE.—Changes in this listing subsequent to Mar. 31, 1970 and names of current representatives are given in *anadian Representatives Abroad* and *Diplomatic Corps and Representatives of Other Countries in Canada*, published ccasionally and obtainable from Information Canada, Ottawa.

Country and Year Representation Established	Present Status of Representative	Address
fghanistan....1968	*Ambassador....	c/o Office of the High Commissioner for Canada, Hotel Shahrazad, Islamabad, West Pakistan. Postal address: P.O. Box 1042, GPO
lgeria....1965	*Ambassador....	c/o Canadian Embassy, 88 Kirchenfeld-strasse, Berne, Switzerland
rgentina....1941	Ambassador....	Brunetta Bldg., Suipacha and Santa Fé. Postal address: Casilla de Correo 1598, Buenos Aires
ustralia....1939	High Commissioner....	Commonwealth Ave., Canberra A.C.T., 2600
ustria....1952	Ambassador....	Dr. Karl Lueger, Ring 10, 1010 Vienna
arbados....1966	*High Commissioner....	c/o Office of the High Commissioner for Canada, 72 South Quay, Port-of-Spain, Trinidad. Postal address: P.O. Box 1246

* Dual accreditation; representative not resident in the country.

1.—Canadian Representation Abroad—continued

Country and Year Representation Established	Present Status of Representative	Address
Belgium....1939	Ambassador....	35, rue de la Science, 1040 Brussels
Bolivia....1961	*Ambassador....	c/o Canadian Embassy, Edificio El Paci co-Washington, 7° Piso, Plaza Washin ton, Lima, Peru. Postal address: Casil 1212
Botswana....1969	*High Commissioner....	c/o Canadian Embassy, Suite 66, Standar General Bldg., 238 Vermeulen St. Post address: P.O. Box 2181, Pretoria, Sout Africa
Brazil....1941	Ambassador....	Edificio Metropole, Av. Presidente Wils 165. Postal address: Caixa Postal 216 ZC-00, Rio de Janeiro
São Paulo....	Consul....	Edificio Scarpa, Av. Paulista 1765-9° anda Postal address: Caixa Postal 6034
Britain....1880	High Commissioner....	Canada House, Trafalgar Sq., S.W. London
Bulgaria....1967	*Ambassador....	c/o Canadian Embassy, Proleterski Brigada 69, Belgrade, Yugoslavia
Burma....1958	*Ambassador....	c/o Office of the High Commissioner f Canada, A.I.A. Building, Kuala Lumpu Malaysia. Postal address: P.O. Box 9
Burundi....1968	*Ambassador....	c/o Canadian Embassy, Édifice Shell, co av. Wangata et boul. du 30-juin. Post address: P.O. Box 8341, Kinshasa, Dem cratic Republic of the Congo
Cambodia....1954	*Commissioner....	c/o Delegation of Canada to the Interna tional Commission for Supervision an Control, Cap Vo Tanh. Postal addres P.O. Box 220, Saigon, Viet-Nam
Cameroon....1962	Ambassador....	Immeuble Soppo Priso, rue Joseph-Cler Postal address: P.O. Box 572, Yaoun
Central African Republic....1962	*Ambassador....	c/o Canadian Embassy, Immeuble Sopp Priso, rue Joseph-Clerc, Yaounde, Cam roon. Postal address: P.O. Box 572
Ceylon....1953	High Commissioner....	6 Gregory's Road, Cinnamon Garden Postal address: P.O. Box 1006, Colomb
Chad....1962	*Ambassador....	c/o Canadian Embassy, Immeuble Sopp Priso, rue Joseph-Clerc, Yaounde, Cam roon. Postal address: P.O. Box 572
Chile....1942	Ambassador....	Ahumada 11. Postal address: Casilla 42 Santiago
Colombia....1953	Ambassador....	Calle 58, No. 10-42. Postal address: (a mail) Apartado Aereo 22031; (surfa mail) Apartado 696, Bogota
Congo, Republic of....1962	*Ambassador....	c/o Canadian Embassy, Édifice She coin av. Wangata et boul. du 30-jui Kinshasa, Democratic Republic of th Congo. Postal address: P.O. Box 8341
Congo (Democratic Republic of)....1962	Ambassador....	Édifice Shell, coin av. Wangata et bou du 30-juin, Kinshasa. Postal address: P. Box 8341
Costa Rica....1961	Ambassador....	Edificio Amalia Avenida 1 y Calle 7. Post address: Apartado Postal 10303, San Jo
Cuba....1945	Ambassador....	Calle 30 No. 518, Esquina a7a, Mirama Postal address: Gaveta 6125, Havana
Cyprus....1961	*High Commissioner....	c/o Canadian Embassy, 84 Habashmonai St., Tel Aviv, Israel
Czechoslovakia....1943	Ambassador....	Mickiewiczova 6, Prague 6
Dahomey....1962	*Ambassador....	c/o Office of the High Commissioner f Canada, Niger House, Tinubu Stree Lagos, Nigeria. Postal address: P. Box 851
Denmark....1946	Ambassador....	Princesse Maries Allé 2, Copenhagen V
Dominican Republic....1954	*Ambassador....	c/o Canadian Embassy, Avenida La E tancia No. 10, 16° Piso. Ciudad Comerci Tamanaco. Postal address: Apartado d Este No. 62302, Caracas, Venezuela
Ecuador....1961	*Ambassador....	c/o Canadian Embassy, Calle 58, No. 10-4 Postal address: (air mail) Apartado Aer 22031; (surface mail) Apartado 69 Bogota, Colombia
El Salvador....1962	*Ambassador....	c/o Canadian Embassy, Edificio Amali Avenida 1 y Calle 7, San José, Costa Ri

* Dual accreditation; representative not resident in the country.

1.—Canadian Representation Abroad—continued

Country and Year Representation Established	Present Status of Representative	Address
Ethiopia.....1966	Ambassador.....	African Solidarity Insurance Building, Haile Selassie 1 Square. Postal address: P.O. Box 1130, Addis Ababa
European Communities (The European Economic Community, The European Atomic Energy Community, The European Coal and Steel Community).....1960	Head of Mission.....	35, rue de la Science, 1040 Brussels, Belgium
Finland.....1949	Ambassador.....	Pohjois Esplanaadikatu 25B, Helsinki
France.....1928	Ambassador.....	35, avenue Montaigne, Paris VIII[e]
Bordeaux.....	Consul General.....	15 bis, allée de Chartres, 33-Bordeaux. Postal address: Canadian Consulate General, Bordeaux
Marseille.....	Consul General.....	Canadian Consulate General, 24, avenue du Prado, Marseille (6[e]), Bouches-du-Rhône
Gabon.....1962	*Ambassador.....	c/o Canadian Embassy, Immeuble Soppo Priso, rue Joseph-Clerc, Yaounde, Federal Republic of Cameroon. Postal address: P.O. Box 572
Gambia.....1966	*High Commissioner.....	c/o Canadian Embassy, 45, av. de la République, Dakar, Senegal. Postal address: B.P. 3373
Germany.....1950	Ambassador.....	Friederich Wilhelmstrasse 14-18, Bonn 53
Duesseldorf.....	Consul General.....	4 Duesseldorf 1, Koenigsallee 82, Duesseldorf
Hamburg.....	Consul General.....	Esplanade 41-47, 2000 Hamburg 36
Berlin.....	*Head of Mission.....	Friederich Wilhelmstrasse 14-18, Bonn 53
Ghana.....1957	High Commissioner.....	E 115-3 Independence Avenue. Postal address: P.O. Box 1639, Accra
Greece.....1943	Ambassador.....	31, Avenue Vassilissis Sofias, Athens 138
Guatemala.....1961	*Ambassador.....	Melchor Ocampo 463-7. Postal address: Apartado 5364, Mexico 5, D.F.
Guinea.....1962	*Ambassador.....	c/o Canadian Embassy, 45, av. de la République, Dakar, Senegal. Postal address: B.P. 3373
Guyana.....1964	High Commissioner.....	High and Church Streets. Postal address: P.O. Box 660, Georgetown
Haiti.....1954	*Ambassador.....	Calle 30 No. 518, Esquina a7a, Miramar. Postal address: Gaveta 6125, Havana
Holy See.....1970	Ambassador.....	Canadian Embassy to the Holy See, 7 Largo Messico, Rome 00198, Italy
Honduras.....1961	*Ambassador.....	c/o Canadian Embassy, Edificio Amalia, Avenida 1 y Calle 7. Postal address: Apartado Postal 10303, San José, Costa Rica
Hong Kong.....1946	Senior Trade Commissioner....	P & O Bldg., 21-23 Des Voeux Road Central. Postal address: P.O. Box 126, Victoria
Hungary.....1965	*Ambassador.....	c/o Canadian Embassy, Mickiewiczova 6, Prague 6, Czechoslovakia
Iceland.....1949	*Ambassador.....	c/o Canadian Embassy, Oscars Gate 20, Oslo 3, Norway
India.....1947	High Commissioner.....	4 Aurangzeb Road. Postal address: P.O. Box 114, New Delhi 11
Indonesia.....1953	Ambassador.....	Djalan Budi Kemuliaan No. 6, Djakarta
Iran.....1958	Ambassador.....	Bezrouke House, corner of Takhte Djamchid Avenue and Forsat Street. Postal address: P.O. Box 1610, Tehran
Iraq.....1961	*Ambassador.....	c/o Canadian Embassy, P.O. Box 1610, Tehran, Iran
Ireland.....1940	Ambassador.....	10 Clyde Road, Ballsbridge, Dublin 4
Israel.....1953	Ambassador.....	84 Hahashmonaim Street, Tel Aviv
Italy.....1947	Ambassador.....	Via G. B. de Rossi 27; 00161 Rome
Milan.....	Consul General.....	Postal address: Via Vittori Pisani, 19; 20124 Milan
Ivory Coast.....1962	Ambassador.....	c/o Canadian Embassy, Botreau-Roussel 9, Abidjan. Postal address: B.P. 21194
Jamaica.....1962	High Commissioner.....	Dominion Life Bldg., Tobago Road, corner Trafalgar Rd. and Knutsford Blvd. Postal address: P.O. Box 1500, Kingston 10
Japan.....1929	Ambassador.....	Embassy of Canada, Akasaka Post Office, Tokyo
Jordan.....1965	*Ambassador.....	c/o Canadian Embassy, Immeuble Alpha, rue Clemenceau, Beirut, Lebanon. Postal address: C.P. 2300

* Dual accreditation; representative not resident in the country.

1.—Canadian Representation Abroad—continued

Country and Year Representation Established	Present Status of Representative	Address
Kenya....1965	High Commissioner	Industrial Promotion Services Bldg., Kimathi Street. Postal address: P.O. Box 30481, Nairobi
Korea, Republic of....1964	*Ambassador.	c/o Embassy of Canada, Akasaka Post Office, Tokyo, Japan
Kuwait....1965	*Ambassador	c/o Canadian Embassy, Bezrouke House, corner of Takhte Djamchid Ave. and Forsat St., Tehran, Iran. Postal address P.O. Box 1610
Laos....1954	*Commissioner	c/o Delegation of Canada to the International Commission for Supervision and Control, Cap Vo Tanh. Postal address P.O. Box 220, Saigon, Viet-Nam
Lebanon....1954	Ambassador	Immeuble Alpha, rue Clemenceau. Postal address: C.P. 2300, Beirut
Lesotho....1968	*High Commissioner	c/o Canadian Embassy, Standard General Bldg., 238 Vermeulen St., Pretoria, South Africa. Postal address: P.O. Box 2181
Libya....1968	*Ambassador	c/o Canadian Embassy, 3 rue Didon, Notre Dame de Tunis, Tunisia. Postal address P.O. Box 606
Luxembourg....1945	*Ambassador	c/o Canadian Embassy, 35, rue de la Science 1040 Brussels, Belgium
Malagasy Republic....1967	*Ambassador	c/o Canadian Embassy, African Solidarity Insurance Bldg., Haile Selassie 1 Square Addis Ababa, Ethiopia. Postal address P.O. Box 1130
Malaysia....1958	High Commissioner	American International Assurance Bldg. Ampang Road. Postal address: P.O. Box 990, Kuala Lumpur
Mali....1970	*Ambassador	c/o Canadian Embassy, 45, avenue de la République. Postal address: P.O. Box 3373, Dakar, Senegal
Malta....1964	*High Commissioner	c/o Canadian Embassy, Via G. B. de Rossi 27, 00161 Rome, Italy
Mauritania....1968	*Ambassador	c/o Canadian Embassy, 45, avenue de la République. Postal address: P.O. Box 3373, Dakar, Senegal
Mauritius....1970	*High Commissioner	c/o Office of the High Commissioner for Canada, Gailey and Roberts Bldg., Independence Ave. Postal address: P.O. Box 1022, Dar-es-Salaam, Tanzania
Mexico....1944	Ambassador	Melchor Ocampo 463-7. Postal address: Apartado 5364, Mexico 5, D.F.
Monaco....1967	*Consul General	c/o Canadian Consulate General, 24, ave. du Prado, Marseille (6e), Bouches-du-Rhône, France
Morocco....1962	*Ambassador	c/o Canadian Embassy, Edificio España, Plaza de España 2, Madrid, Spain. Postal address: Apartado 587
Nepal....1965	*Ambassador	c/o Canadian High Commissioner's Office, 4 Aurangzeb Road, New Delhi, India. Postal address: P.O. Box 114
Netherlands....1939	Ambassador	5 and 7 Sophialaan, The Hague
New Zealand....1940	High Commissioner	I.C.I. Building, Molesworth Street, N.Z. Postal address: P.O. Box 12-049, Wellington North
Nicaragua....1961	*Ambassador	c/o Canadian Embassy, Edificio Amalia, Avenida 1 y Calle 7. Postal address: Apartado Postal 10303, San José, Costa Rica
Niger....1962	*Ambassador	c/o Canadian Embassy, Botreau-Roussel 5, Abidjan, Ivory Coast. Postal address: B.P. 21194
Nigeria....1960	High Commissioner	Niger House, Tinubu Street. Postal address: P.O. Box 851, Lagos
North Atlantic Council (Delegation of Canada)....1952	Permanent Representative and Ambassador	1110 Brussels, Belgium
Norway....1943	Ambassador	Oscars Gate 20, Oslo 3
Organization for Economic Co-operation and Development (The Permanent Delegation of Canada)....1961	Permanent Representative	19, rue de Franqueville, Paris XVIe, France

* Dual accreditation; representative not resident in the country.

1.—Canadian Representation Abroad—continued

Country and Year Representation Established	Present Status of Representative	Address
kistan.....1950	High Commissioner.....	Hotel Shahrazad, Islamabad, West Pakistan. Postal address: P.O. 1042, GPO, Islamabad
nama.....1961	*Ambassador.....	c/o Canadian Embassy, Edificio Amalia, Avenida 1 y Calle 7. Postal address: Apartado Postal 10303, San José, Costa Rica
raguay.....1962	*Ambassador.....	c/o Canadian Embassy, Brunetta Bldg., Suipacha and Santa Fé, Buenos Aires, Argentina. Postal address: Casilla de Correo 1598
ru.....1944	Ambassador.....	Edificio El Pacifico-Washington, 7° Piso, Plaza Washington. Postal address: Casilla 1212, Lima
ilippines.....1949	Consul General.....	1414 Roxas Blvd., Manila. Postal address: P.O. Box 1825
land.....1943	Ambassador.....	Ulica Katowicka 31, Saska Kepa, Warsaw
rtugal.....1952	Ambassador.....	Rua Rosa Araujo 2, Lisbon 2
erto Rico.....1969	Consul.....	Panam Bldg., Hato Rey, San Juan 00917
mania.....1968	*Ambassador.....	c/o Canadian Embassy, Proleterskih Brigada 69, Belgrade, Yugoslavia
wanda.....1967	*Ambassador.....	c/o Canadian Embassy, Edifice Shell, coin av. Wangata et boul. du 30-juin, Kinshasa, Congo. Postal address: P.O. Box 8341
negal.....1962	Ambassador.....	45, avenue de la République. Postal address: P.O. Box 3373, Dakar
erra Leone.....1961	*High Commissioner.....	c/o Office of the High Commissioner for Canada, Niger House, Tinubu Street, Lagos, Nigeria. Postal address: P.O. Box 851
ngapore.....1966	High Commissioner.....	International Building, 360 Orchard Road. Postal address: P.O. Box 845, Singapore
malia.....1968	*Ambassador.....	c/o Canadian Embassy, African Solidarity Insurance Building, Haile Selassie 1 Square, Addis Ababa, Ethiopia. Postal address: P.O. Box 1130.
uth Africa.....1940	Ambassador.....	Standard General Bldg., 238 Vermeulen St. Postal address: P.O. Box 2181, Pretoria
ain.....1953	Ambassador.....	Edificio España, Plaza de España 2. Postal address: Apartado 587, Madrid
dan.....1961	*Ambassador.....	c/o Canadian Embassy, 6 Sharia Mohamed Fahmi el Sayed, Garden City, Cairo, U.A.R. Postal address: Kasr el Doubara Post Office
vaziland.....1970	*High Commissioner.....	c/o Canadian Embassy, Standard General Bldg., 238 Vermeulen St. Postal address: P.O. Box 2181, Pretoria, South Africa
weden.....1947	Ambassador.....	Kungsgatan 24, Stockholm C. Postal address: P.O. Box 14042, S–104 40 Stockholm 14
vitzerland.....1947	Ambassador.....	88 Kirchenfeldstrasse, Berne
yria.....1965	*Ambassador.....	c/o Canadian Embassy, Immeuble Alpha, rue Clemenceau, Beirut, Lebanon. Postal address: C.P. 2300
nzania, United Republic of.1962 (1964)	High Commissioner.....	Gailey and Roberts Bldg., Independence Ave. Postal address: P.O. Box 1022, Dar-es-Salaam
hailand.....1961	Ambassador.....	Thai Farmers Bank Bldg., 142 Silom Road, Bangkok
go.....1962	*Ambassador.....	c/o Office of the High Commissioner for Canada, E115-3 Independence Ave., Accra, Ghana. Postal address: P.O. Box 1639
rinidad and Tobago.....1962	High Commissioner.....	72 South Quay, Port-of-Spain, Trinidad. Postal address: P.O. Box 1246
nisia.....1961	Ambassador.....	3, rue Didon, Notre-Dame de Tunis. Postal address: P.O. Box 606, Tunis R.P.
rkey.....1947	Ambassador.....	Vali Dr. Resit, Cadessi 52, Çankaya, Ankara
ganda.....1962	*High Commissioner.....	c/o Office of the High Commissioner for Canada, Industrial Promotion Services Bldg., Kimathi Street, Nairobi, Kenya
nion of Soviet Socialist Republics.....1943	Ambassador.....	23 Starokonyushenny Pereulok, Moscow
nited Arab Republic.....1954	Ambassador.....	6 Sharia Mohamed Fahmi el Sayed, Garden City. Postal address: Kasr el Doubara Post Office, Cairo

* Dual accreditation; representative not resident in the country.

1.—Canadian Representation Abroad—concluded

Country and Year Representation Established	Present Status of Representative	Address
United Nations		
(The Permanent Mission of Canada to the United Nations).....1948	Permanent Representative and Ambassador.....	866 United Nations Plaza, New York, N.Y. 10017
(The Permanent Mission of Canada to the Office of the United Nations at Geneva).....1948	Permanent Representative and Ambassador.....	8, avenue de Budé, 1202 Geneva, Switzerlan
(Canadian Delegation to the Conference of the Eighteen-Nation Committee on Disarmament).....1962	Ambassador and Adviser to the Government on Disarmament	8, avenue de Budé, 1202 Geneva, Switzerlan
(Permanent Delegation of Canada to the United Nations Educational, Scientific, and Cultural Organization).....1960	Minister and Permanent Delegate.....	1, rue Chanez, Paris XVI^{e}, France
United States of America.....1927	Ambassador.....	1746 Massachusetts Avenue, N.W. Washington, D.C. 20036
Boston.....	Consul General.....	500 Boylston St., Boston, Mass. 02116
Buffalo.....	Consul.....	P.O. Box 57, Niagara Square Station, Buffalo, N.Y. 14201
Chicago.....	Consul General.....	310 South Michigan Ave., Chicago, Ill. 606
Cleveland.....	Consul.....	Illuminating Bldg., 55 Public Square, Cleveland, Ohio 44113
Dallas.....	Consul and Trade Commissioner.....	2100 Adolphus Towers Bldg., 1412 Main St., Dallas, Texas 75202
Detroit.....	Consul.....	1920 First Federal Bldg., 1001 Woodward Ave., Detroit, Mich. 48226
Los Angeles.....	Consul General.....	510 West Sixth St., Los Angeles 14, Cal. 900
Minneapolis.....	Consul General.....	15 South Fifth St., Minneapolis, Minnesota 55402
New Orleans.....	Consul General.....	International Trade Mart, 2 Canal St., New Orleans, La. 70130
New York.....	Consul General.....	680 Fifth Ave., New York 19, N.Y. 10019
Philadelphia.....	Consul and Trade Commissioner.....	Penn Center Plaza, Philadelphia 2, Pa. 191
San Francisco.....	Consul General.....	1 Maritime Plaza, Golden Gateway Center, San Francisco, Cal. 94111
Seattle.....	Consul General.....	1308 Tower Bldg., Seventh Avenue at Olive Way, Seattle, Wash. 98101
Upper Volta.....1962	*Ambassador.....	c/o Canadian Embassy, Botreau-Roussel Postal address: B.P. 21194, Abidjan, Ivory Coast
Uruguay.....1952	*Ambassador.....	c/o Canadian Embassy, Brunetta Building Suipacha and Santa Fé. Postal address: Casilla de Correo 1598, Buenos Aires, Argentina
Venezuela.....1952	Ambassador.....	Avenida La Estancia No. 10, 16^{o} Piso. Ciudad Comercial Tamanaco. Postal address: Apartado del Este 62302, Caracas
Viet-Nam (Delegation of Canada to the International Commission for Supervision and Control).....1954	Commissioner.....	Cap Vo Tanh. Postal address: P.O. Box 2 Saigon
West Indies (Associated States).....1967	Commissioner.....	c/o Office of the High Commissioner Canada, 72 South Quay, Port-of-Spain Trinidad. Postal address: P.O. Box 1
Yugoslavia.....1943	Ambassador.....	Proleterskih Brigada 69, Belgrade
Zambia (Republic of).....1966	*High Commissioner.....	c/o Office of the High Commissioner Canada, Gailey and Roberts Bldg Independence Ave., Dar-es-Salaam, Tanzania. Postal address: P.O. Box 1022

* Dual accreditation; representative not resident in the country.

2.—Representation of Other Countries in Canada

Country and Year Representation Established	Present Status of Representative	Address
ghanistan....1970	Ambassador	c/o Embassy of Afghanistan, 2341 Wyoming Ave. N.W., Washington, D.C. 20008, U.S.A.
geria....1964	Chargé d'Affaires	200 Rideau Terrace, Ottawa
gentina....1941	Ambassador	10 Driveway, Ottawa
stralia....1940	High Commissioner	90 Sparks St., Ottawa
stria....1952	Ambassador	445 Wilbrod St., Ottawa
rbados....1967	High Commissioner	151 Slater St., Ottawa
lgium....1937	Ambassador	85 Range Rd., Ottawa
livia....1961	Ambassador	c/o Embassy of Bolivia, 1145 19th St. N.W., Washington, D.C. 20036, U.S.A.
tswana....1968	High Commissioner	c/o Embassy of the Republic of Botswana, 1701 New Hampshire Ave. N.W., Washington, D.C. 20009, U.S.A.
azil....1941	Ambassador	450 Wilbrod St., Ottawa
itain....1928	High Commissioner	80 Elgin St., Ottawa
lgaria....1968	Ambassador	325 Stewart St., Ottawa
rma....1957	Ambassador	116 Albert St., Ottawa
rundi....1969	Ambassador	c/o Permanent Mission of Burundi to the United Nations, 485 Fifth Ave., New York, U.S.A.
meroon....1962	Ambassador	85 Range Rd., Ottawa
ribbean Commission (Eastern)..	Commissioner	14 Frontenac St., Place Bonaventure, Montreal 3, Que.
ylon....1957	High Commissioner	85 Range Rd., Ottawa
ile....1942	Ambassador	56 Sparks St., Ottawa
ina....1942	Ambassador	54 Range Rd., Ottawa
lombia....1953	Ambassador	140 Wellington St., Ottawa
ngo, Democratic Republic of....1965	Ambassador	18 Range Rd., Ottawa
ngo, Republic of....1968	Ambassador	c/o Permanent Mission of the Republic of the Congo (Brazzaville) to the United Nations, 444 Madison Ave., New York, U.S.A.
sta Rica....1963	Ambassador	c/o Embassy of Costa Rica, 2112 S St. N.W., Washington, D.C. 20008, U.S.A.
ba....1945	Ambassador	700 Echo Dr., Ottawa
prus....1964	High Commissioner	c/o Embassy of Cyprus, 2211 R St. N.W., Washington, D.C. 20008, U.S.A.
echoslovakia....1942	Ambassador	171 Clemow Ave., Ottawa
ahomey....1964	Ambassador	c/o Embassy of Dahomey, 2737 Cathedral Ave. N.W., Washington, D.C. 20008, U.S.A.
enmark....1946	Ambassador	85 Range Rd., Ottawa
minican Republic....1954	Ambassador	200 Rideau Terrace, Ottawa
uador....1961	Chargé d'Affaires *ad interim*	56 Sparks St., Ottawa
Salvador....1962	Ambassador	c/o Embassy of El Salvador, 2 08 California St. N.W., Washington, D.C. 20008, U.S.A.
hiopia....1968	Ambassador	90 Sparks St., Ottawa
nland....1948	Ambassador	85 Range Rd., Ottawa
ance....1928	Ambassador	42 Sussex Dr., Ottawa
abon....1962	Ambassador	c/o Embassy of the Republic of Gabon, 4900-16th St. N.W., Washington, D.C., U.S.A.
ermany....1951	Ambassador	1 Waverley St., Ottawa
hana....1961	High Commissioner	85 Range Rd., Ottawa
reece....1942	Ambassador	Chateau Laurier Hotel, Ottawa
uatemala....1961	Ambassador	c/o Embassy of Guatemala, 2220 R St. N.W., Washington, D.C. 20008, U.S.A.
uinea....1962	Ambassador	c/o Embassy of the Republic of Guinea, 2112 Leroy Pl. N.W., Washington, D.C. 20008, U.S.A.
uyana....1966	Acting High Commissioner	151 Slater St., Ottawa
aiti....1954	Ambassador	150 Driveway, Ottawa
oly See....1969	Pro-Nuncio	724 Manor Ave., Rockcliffe Park, Ottawa
onduras....	Consul General	1225 St. Mark St., Montreal, Que.
ungary....1964	Chargé d'Affaires *ad interim*	7 Delaware Ave., Ottawa
eland....1948	Ambassador	c/o Embassy of Iceland, 2022 Connecticut Ave. N.W., Washington, D.C. 20008, U.S.A.
dia....1947	High Commissioner	200 MacLaren St., Ottawa
donesia....1953	Ambassador	85 Range Rd., Ottawa
an....1956	Ambassador	85 Range Rd., Ottawa

2.—Representation of Other Countries in Canada—continued

Country and Year Representation Established	Present Status of Representative	Address
Iraq.....1961	Third Secretary.....	c/o Embassy of India-Iraqi Interes Section, 1801 P St. N.W., Washingtc D.C. 20036, U.S.A.
Ireland.....1939	Ambassador.....	170 Metcalfe St., Ottawa
Israel.....1953	Ambassador.....	45 Powell Ave., Ottawa
Italy.....1947	Ambassador.....	172 MacLaren St., Ottawa
Ivory Coast.....1964	Ambassador.....	c/o Embassy of the Ivory Coast Republ 2424 Massachusetts Ave. N.W., Washir ton, D.C. 20008, U.S.A.
Jamaica.....1962	High Commissioner.....	85 Range Rd., Ottawa
Japan.....1928	Ambassador.....	75 Albert St., Ottawa
Jordan.....1969	Ambassador.....	c/o Embassy of the Hashemite Kingdom Jordan, 2319 Wyoming Ave. N.W., Was ington, D.C. 20008, U.S.A.
Korea, Republic of.....1963	Ambassador.....	151 Slater St., Ottawa
Kuwait.....1965	Ambassador.....	c/o Embassy of Kuwait, 2940 Tilden S N.W., Washington, D.C. 20008, U.S.
Latvia.....	Acting Consul.....	5210 Dalou St., Montreal 29, Que.
Lebanon.....1955	Ambassador.....	660 Lyon St., Ottawa
Lesotho.....1968	High Commissioner.....	c/o Embassy of the Kingdom of Lesoth 1716 New Hampshire Ave. N.W., Was ington, D.C. 20009, U.S.A.
Liberia.....	Honorary Consul General.....	1010 Beaver Hall Hill, Montreal, Que.
Liechtenstein.....	Ambassador of Switzerland....	5 Marlborough Ave., Ottawa
Lithuania.....	Acting Honorary Consul General.....	1 Trillium Terrace, Toronto 18, Ont.
Luxembourg.....1950	Ambassador.....	c/o Embassy of Luxembourg, 2210 Mass chusetts Ave. N.W., Washington, D. 20008, U.S.A.
Malagasy Republic.....1965	Chargé d'Affaires *ad interim*...	c/o Embassy of the Malagasy Republic, 23 Massachusetts Ave. N.W., Washingtc D.C. 20008, U.S.A.
Malaysia.....1967	High Commissioner.....	151 Slater St., Ottawa
Mali.....1963	Ambassador.....	c/o Embassy of Mali, 2130 R St. N.W Washington, D.C. 20008, U.S.A.
Malta.....1969	High Commissioner.....	c/o Embassy of Malta, 2017 Connectic Ave. N.W., Washington, D.C. 2000 U.S.A.
Mauritania.....1968	Ambassador.....	c/o Permanent Mission of the Islamic Repu lic of Mauritania to the United Natio 8 West 40th St., New York, U.S.A.
Mauritius.....1970	High Commissioner.....	c/o Embassy of Mauritius, 238 Wyomi Ave. N.W., Washington, D.C. 2000 U.S.A.
Mexico.....1944	Ambassador.....	88 Metcalfe St., Ottawa
Monaco.....	Honorary Consul General.....	Tour de la Bourse, Place Victoria, Montre 3, Que.
Morocco.....1962	Ambassador.....	c/o Embassy of Morocco, 1601-21st S N.W., Washington, D.C. 20009, U.S.A.
Nepal.....1966	Ambassador.....	c/o Embassy of Nepal, 2131 Leroy Pl. N.W Washington, D.C. 20008, U.S.A.
Netherlands.....1939	Ambassador.....	275 Slater St., Ottawa
New Zealand.....1942	High Commissioner.....	77 Metcalfe St., Ottawa
Nicaragua.....1963	Ambassador.....	c/o Embassy of Nicaragua, 1627 New Hamp shire Ave. N.W., Washington, D.C. 2000 U.S.A.
Niger.....1963	Ambassador.....	c/o Embassy of Niger, 2204 R St. N.W Washington, D.C. 20008, U.S.A.
Nigeria.....1966	High Commissioner.....	151 Slater St., Ottawa
Norway.....1942	Ambassador.....	140 Wellington St., Ottawa
Pakistan.....1949	High Commissioner.....	505 Wilbrod St., Ottawa
Panama.....1962	Ambassador.....	c/o Embassy of Panama, 2601-29th S N.W., Washington, D.C. 20008, U.S.A.
Peru.....1944	Ambassador.....	539 Island Park Dr., Ottawa
Philippines.....	Consul General.....	Seymour Bldg., 525 Seymour St., Vanc ver 2, B.C.
Poland.....1942	Ambassador.....	443 Daly Ave., Ottawa
Portugal.....1952	Ambassador.....	645 Island Park Dr., Ottawa
Romania.....1967	Ambassador.....	473-475 Wilbrod St., Ottawa
Rwanda.....1965	Ambassador.....	c/o Embassy of the Republic of Rwand 1714 New Hampshire Ave. N.W., Was ington, D.C. 20009, U.S.A.
San Marino.....	Honorary Consul General.....	27 McNider Ave., Montreal 8, Que.
Senegal.....1963	Ambassador.....	c/o Embassy of the Republic of Senegal, 21 Wyoming Ave. N.W., Washington, D. 20008, U.S.A.

2.—Representation of Other Countries in Canada—concluded

Country and Year Representation Established	Present Status of Representative	Address
Sierra Leone....1968	High Commissioner....	c/o Permanent Mission of Sierra Leone to the United Nations, 30 East 42nd St., New York 10017, U.S.A.
Singapore....1969	High Commissioner....	c/o Permanent Mission of Singapore to the United Nations, 711 Third Ave., New York, U.S.A.
Somalia....1968	Ambassador....	c/o Permanent Mission of the Somali Republic to the United Nations, 236 East 46th St., New York, U.S.A.
South Africa....1938	Ambassador....	15 Sussex Dr., Ottawa
Spain....1953	Ambassador....	124 Springfield Rd., Ottawa
Sudan, Democratic Republic of....1966	Ambassador....	c/o Permanent Mission of the Sudan to the United Nations, 757 Third Ave., New York 10017, U.S.A.
Swaziland....1968	High Commissioner....	c/o Embassy of Swaziland, Georgetown Bldg., 2233 Wisconsin Ave. N.W., Washington, D.C. 20007, U.S.A.
Sweden....1943	Ambassador....	140 Wellington St., Ottawa
Switzerland....1946	Ambassador....	5 Marlborough Ave., Ottawa
Tanzania, United Republic of.1965	High Commissioner....	124 O'Connor St., Ottawa
Thailand....1962	Ambassador....	85 Range Rd., Ottawa
Togo....1966	Ambassador....	c/o Embassy of the Republic of Togo, 2208 Massachusetts Ave. N.W., Washington, D.C. 20008, U.S.A.
Trinidad and Tobago....1962	High Commissioner....	75 Albert St., Ottawa
Tunisia....1957	Ambassador....	515 O'Connor St., Ottawa
Turkey....1944	Ambassador....	197 Wurtemburg St., Ottawa
Uganda....1964	High Commissioner....	c/o Permanent Mission of Uganda to the United Nations, 801 Second Ave., New York, U.S.A.
Union of Soviet Socialist Republics....1942	Ambassador....	285 Charlotte St., Ottawa
United Arab Republic....1954	Ambassador....	454 Laurier Ave. E., Ottawa
United States of America....1927	Ambassador....	100 Wellington St., Ottawa
Upper Volta....1966	Ambassador....	c/o Embassy of the Republic of Upper Volta, 5500-16th St. N.W., Washington, D.C. 20008, U.S.A.
Uruguay....1948	Chargé d'Affaires *ad interim*...	200 Rideau Terrace, Ottawa
Venezuela....1953	Ambassador....	140 Wellington St., Ottawa
Yugoslavia....1942	Ambassador....	17 Blackburn Ave., Ottawa

Section 3.—International Activities, 1969-70

Subsection 1.—Canada and the Commonwealth

Over the years the Commonwealth has evolved significantly in size, shape and outlook from the compact and like-minded family of nations of predominantly European stock which first constituted the Commonwealth association at the time of the enactment of the Statute of Westminster in 1931. With its present membership of 28 sovereign states covering about one quarter of the earth's land surface, representing approximately 850,000,000 people of many races, colours, creeds and languages, and including both economically developed and developing countries as well as governments committed and uncommitted in the international power groupings, the Commonwealth more accurately reflects the world over which it spreads so widely. The interests of its members extend to all continents and the variety of issues demanding their attention has greatly increased during the decade of the 1960s and will undoubtedly continue in the 1970s.

Commonwealth members listed according to the year (if post-1931, noted in brackets) when membership was proclaimed are as follows: Britain; Canada; Australia; New Zealand;

India (1947); Pakistan (1947); Ceylon (1948); Ghana (1957); Malaya (1957)*; Nigeri (1960); Cyprus (1961); Sierra Leone (1961); Tanganyika (1961)†; Jamaica (1962); Trinida and Tobago (1962); Uganda (1962); Kenya (1963); Malawi (1964); Malta (1964); Zambi (1964); The Gambia (1965); Singapore (1965)*; Guyana (1966); Botswana (1966); Lesoth (1966); Barbados (1966); Mauritius (1968); and Swaziland (1968). Nauru, which becam fully independent in 1968, has "special" membership in the Commonwealth which entitle it to all the advantages of membership except attendance at Prime Ministers' Conference Through their association with the United Kingdom, which remains responsible for Foreig Affairs and Defence, the six West Indies Associated States (Antigua, Dominica, Grenada St. Kitts–Nevis–Anguilla, St. Lucia and St. Vincent) also have an appropriate relationshi with the Commonwealth.

One important aspect of Canadian foreign policy has been continuing membership i the Commonwealth. Canada has supported the extension and development of a vigorou and effective Commonwealth capable of exerting a beneficial influence for internationa peace and progress. Commonwealth ties give Canada a special relationship with this grou of nations which, despite the diversity of their backgrounds, share important commo ideals and traditions. These ties are characterized in the main by a spirit of co-operatio developed through consultation and a continuous exchange of views. These exchanges a many levels take place not only in Commonwealth capitals but also in other countries a well as at the United Nations and in other international gatherings.

The Commonwealth Secretariat was established by a 1965 decision of Prime Minister and is located in Marlborough House in London. The first Secretary-General of th organization is Mr. Arnold Smith, a Canadian whose appointment has been extended for second five-year term. The Secretariat has the responsibility of organizing and servicin official Commonwealth conferences; it facilitates the exchange of information betwee member countries and generally stands at the service of all Commonwealth governments a a visible symbol of the spirit of co-operation which animates the Commonwealth. Th Secretariat of the former Commonwealth Economic Committee and the Commonwealt Education Liaison Unit, both based in London, were amalgamated with the Commonwealt Secretariat at the end of 1966 to become the Commodity and Education Divisions, respec tively. There is also a scientific adviser on the staff and in 1969, in compliance with th recommendations of the Commonwealth Prime Ministers' Meeting in 1969, a small Lega Division was established and an information officer and a medical adviser appointed Canada's contribution to the 1969-70 budget of the Secretariat was $289,827, whic represented 19.2 p.c. of the total.

The single most important conference organized by the Secretariat is that of th Commonwealth Prime Ministers, the latest having been held in London in January 1969 present plans are that the Prime Ministers will next meet in Singapore in early 1971 Meetings arranged by the Secretariat in 1969-70 included the annual meeting of Common wealth Finance Ministers and Senior Finance Officials in September 1969 held in Barbados the fourth meeting of the Commonwealth Telecommunications Council held in London i April and a number of special or regional meetings including the African Regional Semina on Youth held in Nairobi in November and a Seminar for senior Commonwealth diplomat on the changing patterns in the organization and conduct of foreign policy held in Singapor in March 1970. Immediately prior to the 1969 World Health Assembly Meeting held i Boston, Commonwealth representatives in attendance met to discuss plans for the nex

* When Singapore, Sarawak and Sabah joined the Federation in September 1963, Malaya became Malaysia Singapore separated from Malaysia in August 1965 to become an independent republic.

† In early 1964, Tanganyika and Zanzibar joined to form the United Republic of Tanzania.

ommonwealth Medical Conference and will do so again in May 1970 when the Assembly eets in Geneva.

Commonwealth developing countries continued to receive considerable sums of Canaian aid assistance. Canada's total allocated contribution under the Colombo Plan from s inception in 1951 to March 1970 was approximately $1,233,000,000 (see pp. 201-202). anadian allocations to Commonwealth countries in Africa through SCAAP amounted to ore than $108,000,000 for the period from 1960 to March 1970, and approximately 75,000,000 was allocated to Commonwealth Caribbean countries from 1966 to March 1970.

Canada is an active participant in the Commonwealth Scholarship and Fellowship lan (see also p. 203) contributing $1,700,000 in the 1969-70 fiscal year and a total of 9,900,000 since 1951. During the 1968-69 academic year, 347 students came to Canada nder this Plan, most of them from developing countries. Canada also provides for the raining and provision of teachers for service in Commonwealth countries and assists in lans for co-operation in technical education. During the academic year 1968-69, there ere 918 Canadian teachers and university professors in the developing countries of Southast Asia, Africa and the Caribbean area, of whom 545 were in Commonwealth countries.

Subsection 2.—Francophonie

Heir to the great traditions of the French language and culture, Canada contributes ully to the establishment of special links between francophone countries. Its bilateral elations with France have developed greatly in recent years through political consultaions, parliamentary visits, cultural and scientific exchanges, increased trade, officer exchanges, defence production co-operation, and the like. Links with other French-speaking countries have also been strengthened by the establishment of diplomatic missions and developing exchanges in a number of fields. A growing proportion of Canadian economic aid has been directed to francophone countries in Africa. Canada has played an active role in developing multilateral co-operation between French-speaking countries, a policy based on the recognition of the value to Canada of its ties with a multi-racial community of some 30 countries with 150,000,000 inhabitants, linked together by French culture. In keeping with this policy, Canada is a founding member of the Agence de coopération culturelle et technique which came into being as a result of the conference of the wholly or partly French-speaking states of the world held at Niamey, capital of the Republic of Niger, in February 1969. Canada is also a member of the Conference of Education Ministers of the Francophone States of Africa and Madagascar. Likewise, Canada is a founding member of the Conference of the Youth and Sports Ministers of Francophone Africa and Madagascar which came into being in Paris in December 1969. Canadian participation is on the basis of full federal co-operation with the provinces interested in these organizations.

Subsection 3.—Canada and the United Nations

Firm support for the United Nations is an essential element of Canadian foreign policy. Canada has contributed over the years to the efforts of the organization to keep the peace in various parts of the world, including the Middle East, Kashmir, the Congo, West Irian and Cyprus. In the 1956 Middle East crisis, Canada played a significant role in the establishment of the United Nations Emergency Force and participated in the Force until its withdrawal in 1967. In 1960, Canada responded to a UN request for support of its operations in the Congo by supplying military and civilian specialists and by pledging political and financial support. In 1962, Canada provided aircraft,

pilots and maintenance crews to assist the United Nations Temporary Executive Authority (UNTEA) in the exercise of its peacekeeping functions in West Irian. Canada maintains a large contingent in Cyprus (UNFICYP) to assist the UN to prevent open fighting between the Greek and Turkish communities. Canada has consistently advocated the strengthening of the peacekeeping capacity of the UN by means of advance planning at UN headquarters and advance cost-sharing arrangements and has taken steps to improve the readiness of its own forces and urged that others be invited to do the same. Despite slow progress and occasional setbacks, Canada continues to believe that the UN has an important role to play in the maintenance of international peace and security.

Canada also participates directly in the work of the UN through its membership in various UN bodies including all of the 13 specialized agencies and the International Atomic Energy Agency. The International Civil Aviation Organization (ICAO), with headquarters in Montreal, is the only specialized agency of the UN with headquarters in Canada.

In 1967, Canada completed a three-year term on the Economic and Social Council but continues as a member of most of the important subsidiary bodies of the Council such as the Economic Commission for Latin America, the Committee for Programme and Co-ordination, the Inter-Governmental Committee of the UN/FAO World Food Programme, the Commission on Social Development, the Statistical Commission, the Commission on Narcotic Drugs, the Committee on Housing, Building and Planning and the Commission on the Status of Women.

Canada also serves on the Governing Council of the United Nations Development Programme (UNDP) and the Industrial Development Board of the United Nations Industrial Development Organization (UNIDO). Canada participates directly on the Executive Committee of the Office of the United Nations Children's Fund (UNICEF), the Trade and Development Board of the United Nations Conference on Trade and Development (UNCTAD) and the Executive Committee of the Office of the United Nations High Commissioner for Refugees (since the Second World War, Canada has received approximately 350,000 refugees from overseas).

Canada belongs to 16 subsidiary bodies of the General Assembly, including the Committee on the Peaceful Uses of Outer Space, the Disarmament Commission, the Special Committee on Peacekeeping Operations and the United Nations Scientific Committee on the Effects of Atomic Radiation. Canada maintains Permanent Missions at both UN headquarters in New York and at the European Office of the organization in Geneva.

Canada pays 3.02 p.c. of the organization's regular budget, and is the eighth largest contributor. In the year ended Mar. 31, 1968, Canada's share of the gross expenses of $154,915,250 (Cdn.) was approximately $4,048,684. The cost to Canada of maintaining its contingent in Cyprus was about $1,235,123 in 1968-69. In addition, Canada makes voluntary contributions to special UN programs such as the United Nations Development Programme (UNDP), the United Nations High Commissioner for Refugees (UNHCR), the United Nations Children's Fund (UNICEF), the United Nations Relief and Works Agency in the Middle East (UNRWA) and the World Food Programme (WFP).

Canada's total assessment and contributions to the UN, its specialized agencies and related bodies totalled approximately $378,000,000 during the period 1945-68 and about $39,000,000 in 1967. In 1967, Canada's quota (assessed share of capital) for the International Bank for Reconstruction and Development (IBRD) and the International Monetary Fund (IMF) was increased about $45,405,000, of which some $4,540,000 was paid during 1967. The Canadian subscription to the IBRD now totals $856,215,150.

Canadian Financial Contributions to the United Nations.—In 1968-69, Canada's contributions to the United Nations system were as follows:—

Agency	Percentage Assessment or Voluntary Contribution (V)	Contribution (Cdn. $)
United Nations—		
Regular Budget	3.02	4,048,684
Special Accounts—		
Force in Cyprus (UNFICYP)[1]	V	1,235,123
Congo Civilian Fund[2]	V	500,000
Relief and Works Agency (UNRWA)—		
Cash	V	500,000
Food Aid	V	1,019,000
World Food Programme—		
Cash	V	2,481,400
Commodities	V	7,916,400
High Commissioner for Refugees (UNHCR)	V	350,000
United Nations Development Programme (UNDP)	V	10,750,000
Children's Fund (UNICEF)	V	1,000,000
Institute for Training and Research (UNITAR)	V	60,000
UN Educational and Training Programme for Southern Africa	V	26,750
Specialized Agencies—		
International Labour Organization (ILO)	3.36	959,296
Food and Agriculture Organization (FAO)	4.07	1,138,931
World Health Organization (WHO)	2.71	1,827,386
United Nations Educational, Scientific and Cultural Organization (UNESCO)	2.84	1,068,112
International Civil Aviation Organization (ICAO)	3.75	264,999
Inter-governmental Maritime Consultative Organization (IMCO)	1.53	17,493
International Telecommunication Union (ITU)	3.80	217,505
World Meteorological Organization (WMO)	2.62	73,900
Universal Postal Union (UPU)[3]	2.65	37,013
International Development Association (IDA)[4]	V	15,027,000
International Bank for Reconstruction and Development (IBRD)[5]	V	—
International Finance Corporation (IFC)[6]	—	—
International Monetary Fund (IMF)[5]	V	—
International Atomic Energy Agency (IAEA)—		
Regular Budget	2.74	314,543
Operational Budget	V	61,375
Related Organizations—		
International Committee for the Red Cross	V	20,000
United Nations Association in Canada	V	27,000

[1] Estimated. This figure from April 1968 to March 1969 represents the cost to Canada of maintaining its contingent in Cyprus after reimbursement for certain expenses by the United Nations; it does not include salaries and similar costs that Canada would have had to pay if the personnel had remained in Canada. [2] This allocation to the Fund is a payment and not a disbursement. [3] Canada also contributed $9,581 as its share of the costs of the UPU English Translation Service. [4] The President of the World Bank called for a replenishment of $1,000,000,000 a year from 1968 to 1971. The Canadian share of the replenishment is $67,200,000 (U.S.) which is 5.6 p.c. of the total. In addition, Canada agreed to make supplementary contribution of $7,800,000, bringing its total to $75,000,000 (U.S.) or $81,000,000 (Cdn.), in addition to previous total Canadian contributions of $85,760,500. [5] In 1966 there was a special 1-p.c. increase in the Canadian quota and subscription to the IMF and the IBRD, bringing the totals in both institutions to $856,000,000, of which 10 p.c. or $85,600,000 has been paid. [6] IFC invests in productive private enterprises in association with private investors and without government guarantee of repayment. As of Dec. 31, 1967, the total subscribed capital, all paid in gold or convertible currencies, was $100,150,000, of which $3,600,000 represented Canadian subscriptions.

Specialized Agencies.—Canada is a member of each of the 13 specialized agencies of the UN, and also of the International Atomic Energy Agency (IAEA), an autonomous international organization under the aegis of the UN. These agencies are invested with wide international responsibilities established by intergovernmental agreement, and act in relationship with the UN to assist in carrying out the terms of the Charter. Co-ordination of activities of the agencies is promoted by the Administrative Committee on Co-ordination established by the Economic and Social Council. This Committee is composed of the Secretary General of the UN, the executive heads of the specialized agencies, the Director General of the IAEA and other high officials of the UN. It con-

siders common administrative questions, inter-agency program co-ordination and projects or problems of special urgency to be undertaken jointly by several agencies. The agencies also report annually to the Economic and Social Council of the UN.

International Labour Organization.—The International Labour Organization (ILO) was originally established with the League of Nations in 1919 and became a specialized agency of the UN in 1946. It brings together representatives of governments, employers and workers from 118 (1967) member states in an attempt to promote social justice by improving living and working conditions in all parts of the world. The ILO is responsible for a number of technical programs financed by the United Nations Development Programme, as well as training programs under its regular budget. To further its work, the ILO holds numerous meetings during the year as well as an International Labour Conference in Geneva each June. At the 52nd Session of the Conference in June 1968 the principal debate focused on the ILO's role in the field of human rights.

Food and Agriculture Organization.—The Food and Agriculture Organization (FAO) celebrates its 25th anniversary in 1970. The first Conference was held in 1945 in Quebec City. It now has 119 members. The objectives of the Organization are to raise the levels of nutrition and living standards of its members and to improve the techniques of the production and distribution of food and agricultural, fishery and forestry products. To this end, the FAO Secretariat collects, analyses and distributes technical and economic information and encourages appropriate national and international action. A Council meets twice a year to give direction and policy guidance to the Secretariat; the FAO Conference, which is the governing body of the Organization, meets every other year. Headquarters are in Rome, Italy.

Canada participates actively in FAO activities and is a member of the Council, the Committee on Commodity Problems (CCP), the Consultative Sub-Committee on Surplus Disposals, the FAO Group on Grains, the North American Forestry Commission, the Commission on Fisheries and other FAO bodies. A number of Canadians are on the staff at Rome headquarters and many Canadians have undertaken assignments under FAO technical assistance programs. Canadian membership in the Organization is provided for by an Act of the Canadian Parliament passed in 1945. A committee of officials from Canadian Government departments (the Canadian Interdepartmental FAO Committee) maintains liaison between the FAO Secretariat and the Canadian Government.

The World Food Programme first began operations on a three-year experimental basis at the beginning of 1963 under the joint auspices of the FAO and the UN. The Programme provides food aid on a multilateral basis for emergency relief and promotes economic and social development, including feeding of children. At a UN–FAO Pledging Conference in New York in January 1970, $215,600,000 was pledged toward a two-year program (1971-72). Canada, with a pledge of $30,000,000, is the second largest supporter of the Programme.

World Health Organization.—The World Health Organization (WHO) came into being in 1948 and is one of the largest of the specialized agencies of the UN, having a total membership of 128. Functioning through the World Health Assembly (an organization composed of an Executive Board, a Secretariat and six regional committees), WHO acts as a directing and co-ordinating authority on international health matters. In addition, it provides advisory and technical services to help countries develop and improve their health services. The 23rd World Health Assembly was held in Boston in July 1969. The headquarters of World Health Organization is in Geneva.

United Nations Educational, Scientific and Cultural Organization.—The UNESCO was established in 1946 "to contribute to peace and security by promoting collaboration among the nations through education, science and culture in order to further universal respect for justice, for the rule of law, for human rights and fundamental freedoms". Its headquarters is in Paris and total membership in early 1970 was 126 states.

The Organization is made up of three principal organs—the General Conference which is the policy-making body, the Executive Board and the Secretariat. Representatives from member states make up the General Conference which meets every two years to consider applications for membership, elect the Executive Board, plan the program and approve the budget for the ensuing two-year period. At the 15th Session of the General Conference, held in Paris in October and November 1968, a Canadian, Mr. Graham McInnes, was elected to the Executive Board for a six-year term. The 15th Session approved a budget of $77,400,000 (U.S.) for 1969-70, giving priority to the educational needs of the developing countries and to science activities, particularly of the application of science to development; the Canadian assessment rate is 2.84. Further information about the Organization may be obtained from the Canadian Commission for UNESCO, Ottawa.

International Civil Aviation Organization.—The ICAO, with headquarters in Montreal, was established in 1947 to study problems of international civil aviation and the establishment of international standards and regulations for civil aviation. ICAO operations are conducted through its Assembly, Council Committees and Secretariat. Canada has been a member of the 27-nation Council, the governing body of ICAO, since its inception. The Assembly, consisting of all member states, is convened at least once in a three-year period to decide on policy and vote on the budget.

International Telecommunication Union.—Canada is a member of the International Telecommunication Union (ITU), which traces its origin to the International Telegraph Convention of 1865 and the International Radio Telegraph Convention of 1906. The ITU is concerned with the maintenance of international co-operation for the improvement and use of telecommunications of all kinds for the benefit of the general public. It has 129 member countries. The International Telecommunication Convention which was adopted by the Plenipotentiary Conference of the Union at Montreux, Switzerland, in 1965 came into force on Jan. 1, 1967. Canada is represented on the 29-member Administrative Council, the executive organ of the ITU.

World Meteorological Organization.—Canada is a member of the World Meteorological Organization (WMO), a specialized agency of the UN since 1951 but developed from the International Meteorological Organization founded in 1878. The membership in 1967 was 131. The Fifth World Meteorological Congress, held in Geneva in April 1967, approved a program for the development of an improved world-wide meteorological system which was given the name "World Weather Watch". Canada is a member of the Executive Committee of the Organization.

Inter-Governmental Maritime Consultative Organization.—The Inter-Governmental Maritime Consultative Organization (IMCO) was established in 1959 to promote international co-operation on technical shipping problems and the adoption of the highest standards of safety and navigation and has a membership of 65 (1967). IMCO exercises bureau functions for International Conventions on Safety of Life at Sea, Prevention of Pollution of the Sea by Oil and Facilitation of International Maritime Traffic. Canada was elected to the Council of IMCO for a two-year term ended in 1969 and to the Maritime Safety Committee for a four-year term ended in 1969.

Universal Postal Union.—With a membership of 132 (1967), the Universal Postal Union (UPU) is one of the largest of the specialized agencies of the UN; it is also one of the oldest, having been founded in Berne in 1874 with the principal aim of improving postal services throughout the world and promoting international collaboration. The Universal Postal Congress is the supreme authority of the UPU and normally meets every five years to review the Universal Postal Convention and its subsidiary instruments. In the interim, UPU activities are carried on by an executive council of which Canada is at present a member, a consultative committee on postal studies, and an international bureau. The 16th Congress was held in Tokyo in 1969.

International Monetary Fund.—The IMF, established by the Bretton Woods Con ference in 1944, came into being in 1945. It provides machinery for international con sultation and collaboration on monetary, payment and exchange problems, including th promotion of exchange stability, the elimination of exchange restrictions, the establishmen of a multilateral system of current payments and the expansion and balanced growth c international trade. Also, member countries under certain conditions may draw on th regular resources of the Fund, which now amount to some $21,000,000,000 (of which th equivalent of about $3,700,000,000 is in gold) or on the supplementary resources c $6,000,000,000 made available in 1962 under the General Arrangements to Borrow, whic have since been extended to October 1975. Canada's present subscription and quota i the IMF is $740,000,000 (U.S.), of which 25 p.c. is payable in gold and the remainder i Canadian currency.

At the 1969 Annual Meeting, IMF Governors voted to activate a new facility whic will provide for the distribution to member countries of some $9,500,000,000 (U.S.) i Special Drawing Rights during the three-year period 1970-72. Increases in members quota in the Fund were proposed in late 1969 which, if approved, will increase the regula resources of the Fund to some $28,900,000,000 (U.S.). The Fund has 111 member Canada has been represented on the Fund's Executive Board since its inception.

World Bank Group.—The World Bank Group, consisting of the International Ban for Reconstruction and Development, or World Bank, the International Finance Corpor tion and the International Development Association, is by far the largest of the multilatera aid-giving institutions and accounts for 11 p.c. of the capital flows to the less-develope countries from all multilateral and western bilateral aid agencies combined.

The *International Bank for Reconstruction and Development* or *World Bank*, like th International Monetary Fund, originated in the Bretton Woods Conference of 1944. It early loans were made to assist in the postwar reconstruction of Europe but it has playe an increasingly important role in the provision of financial assistance and economic advic to the less-developed countries.

By June 30, 1969, the Bank had made 636 loans totalling $12,622,000,000 (U.S. The resources available to the Bank for use in its lending operations are: (1) that portio of its subscribed capital which is paid in by governments and freely usable ($1,912,000,000 (2) its retained income from operations ($965,000,000); and (3) the funds it is able to rais by the sale of bonds to central banks and government agencies and on private capit markets. The World Bank's policy is to keep its lending rate as low as is compatible wit the maintenance of its ability to borrow. The rate was raised from 6½ p.c. to 7 p.c. i August 1969. Maturity periods on loans usually range between 15 and 25 years. Th level of the Bank's lending in the year ended June 30, 1969, was $1,399,000,000. Th greater part of the Bank's lending has financed so-called infrastructure projects whic provide the framework supporting the rest of a country's economy but which generall do not attract private investors. About one third of the total loans has financed the de velopment of electric power plants and transmission lines; another third has financed rail ways, roads and ports; and most of the remainder has been divided between industry an agriculture. In recent years, however, the Bank has been making loans for educatio and placing increasing emphasis on agriculture.

Canada's subscription to the World Bank is $792,000,000 (U.S.) out of a total for a countries of $23,036,000,000. Only 10 p.c. of each subscription is paid in, however, wit the balance remaining as a guarantee against which the Bank is able to sell its own bonc in world capital markets. By selling such bonds and by selling loans from its portfoli to other investors, the World Bank augments its capital. As of June 30, 1969, the Ban had outstanding borrowings of $4,081,000,000 (U.S.), mostly in the form of U.S. dolla bonds but also including issues denominated in Canadian dollars, Belgian francs, Deutsch marks, Italian lire, Netherlands guilders, pounds sterling, Swedish kronor and Swiss franc

n all, the Bank has offered seven bond issues totalling $135,000,000 (Cdn.) in the Canaian market. Maturities on these bonds ranged from one to 25 years and the interest ate from 3½ p.c. to 7 p.c.

The *International Finance Corporation* (IFC) was established in 1956 as an affiliate f the IBRD to assist less-developed member countries to promote the growth of the rivate sector of their economies. IFC's principal objectives are to provide risk capital or productive private enterprises, in association with private investors and management; o encourage the development of local capital markets; and to stimulate the international ow of private capital. IFC makes investments in the form of share subscriptions and ong-term loans, carries out standby and underwriting arrangements, and provides financial nd technical assistance to privately controlled development finance companies. Of IFC's otal subscribed capital of $106,540,000 (U.S.), Canada provided $3,600,000 (U.S.). In ddition to its subscribed capital, IFC is able to finance its activities through loans from s parent institution, the World Bank. Total investments and underwriting commitments by IFC to June 1969 amounted to $364,700,000 (U.S.). Commitments made during he fiscal year ended in June 1969 were $92,900,000.

The *International Development Association* (IDA), also an affiliate of the IBRD, was stablished in 1960 to meet the situation of a growing number of less-developed countries hose need for, and ability to make use of, outside capital is greater than their ability to ervice conventional loans. Consequently, the terms of IDA development credits are lesigned to impose far less burden on the balance of payments of borrowing countries than onventional loans. Credits extended to June 1969 have each been for a term of 50 years, earing no interest but with a service charge of ¾ of 1 p.c. per annum. IDA secures its esources from governments in the form of interest-free subscriptions and contributions nd, to a smaller extent, from a portion of World Bank profits. As of June 30, 1969, esources made available to the Association totalled approximately $2,300,000,000 (U.S.), f which Canada contributed $154,500,000 (U.S.). Credits extended by the Association otalled about $2,170,000,000 (U.S.).

International Atomic Energy Agency.—Formed in 1957, the International Atomic Energy Agency (IAEA) is an autonomous international organization under the aegis of he UN. The Agency was given a mandate to seek to accelerate and enlarge the contribuion of atomic energy to peace, health and prosperity throughout the world in a variety of ways. Because Canada has been designated as one of the five members most advanced in nuclear technology, including the production of source materials, a Canadian representative has served on the IAEA Board of Governors since the inception of the Agency.

As of June 1969, IAEA membership consisted of 98 states. The organization of conferences and symposia of experts, the dissemination of information and the provision of technical assistance are among the methods that the Agency adopts to carry out its functions. With the rapid expansion in the use of nuclear power, much of the Agency's program is devoted to this field as well as to the use to which isotopes may be put in agriculture and medicine. An aspect of the IAEA activities that is becoming increasingly significant relates to the development and application of safeguard measures to ensure that nuclear materials supplied for peaceful purposes are not diverted to military uses.

International Law Commission.—By Article 13(1) of the Charter of the United Nations, one of the purposes of the UN General Assembly is to encourage the progressive development of international law and its codification. In order to implement and to assist in this function, the International Law Commission was created by a General Assembly resolution dated Nov. 21, 1947. It is composed of 25 members who are elected in their individual capacity. They serve for terms of five years and, in general, represent the main forms of civilization and principal legal systems of the world. As at Dec. 31, 1969, the 25 countries whose nationals formed the International Law Commission were: Afghanistan, Algeria, Argentina, Brazil, Britain, Chile, Dahomey, Finland, France, Greece,

Hungary, India, Iraq, Israel, Italy, Japan, Madagascar, Mexico, the Netherlands, Nigeria, the Union of Soviet Socialist Republics, the United Arab Republic, the United States, Uruguay and Yugoslavia. Canada's term expired in 1968.

Subsection 4.—Canada and the Conference of the Committee on Disarmament

"No single international activity... rates higher priority in the opinion of this Government than the pursuit of effective arms control and arms limitation agreements." These words, spoken by Canada's Prime Minister in October 1969 during the Throne Speech debate, clearly indicate the importance that is placed by the Canadian Government on the approach to world peace through arms control. Canada is an active member of the Conference of the Committee on Disarmament (CCD), the 26-nation UN negotiating body that sits in Geneva as successor to the Eighteen-Nation Disarmament Committee (ENDC). The CCD has before it the task of seeking agreements in such important areas of arms control as a comprehensive prohibition of nuclear weapons testing to include underground tests, seabed arms control and chemical and biological (bacteriological) weapons. One obstacle to the achievement of a ban on underground nuclear tests has been the problem of ensuring compliance through adequate verification. As a practical step that might facilitate a solution to the problem of verification, Canada sponsored a resolution, accepted at the 24th UN General Assembly, inviting member states to indicate their willingness to collaborate in the international exchange of seismological data to assist in the identification of underground tests. The coming into effect of the Non-Proliferation Treaty (NPT) on Mar. 5, 1970, is the most positive recent development in the whole field of arms control and disarmament.

Subsection 5.—Canada and the North Atlantic Treaty Organization

During the course of 1969 there were three NATO Ministerial Meetings. In addition, regular meetings of the Permanent Representatives were held continuously throughout the year at NATO headquarters in Brussels.

The first Ministerial Meeting of 1969, which was held in Washington on Apr. 10 and 11, had a special ceremonial aspect since it included activities to commemorate the 20th anniversary of the signing of the North Atlantic Treaty. For the occasion, Canada was represented by both the Secretary of State for External Affairs and the Minister of National Defence. One of the features of the ceremonial program was an address by United States President Nixon to a public meeting of the North Atlantic Council in Ministerial Session.

In their closed sessions, the NATO Ministers were concerned primarily with re-examining Alliance policy toward East–West relations in the aftermath of the Soviet Union's invasion of Czechoslovakia. The Ministers reaffirmed the intention of their governments to continue the search for progress toward the establishment of secure, peaceful and mutually beneficial relations between East and West and their willingness to explore all appropriate openings for negotiations toward this goal. In particular, they expressed their desire to determine which concrete issues might best lend themselves to fruitful negotiation and better relations with the other side. The Ministers, therefore, instructed the Council in Permanent Session to draft a list of these issues and to study how a useful process of negotiation could best be initiated.

At the same time, the Ministers identified a new and growing area of interest to the Alliance by noting that their countries share common environmental problems which, unless squarely faced, could imperil the welfare and progress of their societies. The Council in Permanent Session was therefore instructed to examine how to improve in every practical way, the exchange of views and experience among the allied countries in the task of creating a better environment for their societies.

The Secretary of State for External Affairs used the occasion of the meeting to explain to the other members that, as indicated in the Prime Minister's statement of Apr. 3, Canada had decided to remain a member of NATO but to embark on a planned and phased reduction

of the size of the Canadian Armed Forces in Europe, in consultation with Canada's allies. A leading factor in this decision had been the magnificent economic recovery of western European countries and their increased ability to provide conventional forces for deployment by NATO in Europe.

The second NATO ministerial gathering of 1969 was a meeting in Brussels on May 28 of the Defence Planning Committee which includes representatives from all NATO countries except France. On that occasion, the Defence Ministers reaffirmed the validity of the Alliance's strategy of flexible response and the need for a credible conventional and nuclear deterrent. They provided guidance to the NATO military authorities for the preparation of force goal proposals for the period 1971-75 and approved the establishment of an On-Call Naval Force for the Mediterranean. A significant aspect of the meeting was the detailed outline given by Canada's Minister of National Defence of the proposed changes in Canada's military contribution to the Alliance.

On Dec. 4 and 5 the annual combined meeting of the North Atlantic Council and the Defence Planning Committee in Ministerial Session was held in Brussels. The principal subject examined by the Council was the report of the Permanent Representatives on the question of negotiations with the countries of Eastern Europe on subjects of mutual concern. The Ministers expressed the view that, by means of discussion of specific and well-defined subjects, it should be possible to progressively reduce tensions and thus facilitate discussion of the more fundamental questions separating the two sides.

The Ministers also reviewed the possibilities for negotiations on such subjects as arms control and disarmament, Germany and Berlin, and economic, technical and cultural exchanges. They identified mutual and balanced force reductions and environmental questions as subjects on which early discussions with the other side might be useful, and noted the references that had been made throughout the year by eastern European countries to the possibility of holding an early conference on European security. The Ministers agreed that careful advance preparation and prospects for concrete results would be necessary if such a meeting were to serve a useful purpose. Meanwhile, progress in the bilateral and multilateral discussions already under way would help to ensure the success of any eventual conference. It was accepted that such a conference should include participation by the North American members of the Alliance.

The Ministers also welcomed the opening, earlier in the fall, of talks between the United States and the Soviet Union on strategic arms limitations and the agreement reached by Permanent Representatives to establish a NATO Committee on the Challenges of Modern Society to further co-operation between members of the Alliance on environmental problems.

At the meeting of the Defence Planning Committee, the Ministers reviewed NATO force plans for 1970 and took note of the positive outcome of consultations with Canadian authorities concerning their forces for Europe which had been initiated following the Defence Ministers' meeting on May 28. In reviewing the activities of NATO's Nuclear Planning Group over the preceding year, the Ministers adopted two policy documents (concerning general guidelines for nuclear consultation procedure and for the possible tactical use of nuclear weapons in the defence of a treaty area) and agreed that Canada with Norway and Turkey would occupy the rotating seats on the NPG for an 18-month period beginning Jan. 1, 1970.

Canadian Contribution to NATO.—During 1969, Canada contributed to the military strength of the Alliance by maintaining an army brigade group and an air division in Europe and supporting forces in Canada. Canadian naval forces continued to be earmarked for assignment to the Supreme Allied Command Atlantic (SACLANT), for the defence of the North Atlantic region. Canada also participated with the United States in the defence of North America, which is part of the NATO area, through the provision of sea, land and air defence elements. The latter are assigned to the operational control of the North American Air Defence Command (NORAD).

Since 1950, Canada has contributed approximately $1,910,000,000 to NATO infrastructure and related military programs and to mutual assistance to the European members of NATO. The mutual assistance program has consisted of transfers of equipment to member countries and aircrew training in Canada of NATO forces. The program has, of course, decreased sharply in magnitude in recent years, because of changing conditions and, in particular, the increasing ability of the European members to meet their individual defence requirements. Transfers of equipment now consist only of continued spares support, mainly from service stocks, of aircraft provided some years ago to Greece and Turkey.

Subsection 6.—Canada and the United States

Relations with the United States are of vital importance to Canada and constitute what is in many ways a unique experiment in international amity. Geography has made the two countries neighbours, community of interest has made them friends, and the demographic realities and economic patterns of today contribute to the conception of partnership which best characterizes the relationship between them. As an important example, Canada sells to the United States some three quarters of all its exports and buys almost one quarter of that country's exports, in an exchange of goods that now totals approximately $20,000,000,000 a year. Co-operation in bilateral and multilateral affairs has marked this relationship in the past and experience has demonstrated a willingness in both countries to maintain and foster a spirit of sympathy and understanding in dealing with one another.

As indicated in the previous Sections and Subsections of this Chapter, both countries are active members of the United Nations and its many specialized agencies and both participate actively in the North Atlantic Treaty Organization (NATO), the General Agreement on Tariffs and Trade (GATT), the Organization for Economic Co-operation and Development (OECD), and other important international organizations. There are also many bilateral bodies that facilitate Canada–United States co-operation. The Ministerial Committee on Trade and Economic Affairs annually brings together members of the Cabinet in both countries for extensive discussions on a wide range of problems of bilateral and international interest. The Permanent Joint Board on Defence and the International Joint Commission are forums, respectively, for the discussion of North American defence and problems related to boundary waters, and many joint committees and agencies deal with other specialized subjects. But perhaps the most important factor in reinforcing the traditional friendship of the two countries is the continual intermingling of their peoples as private individuals across the shared border.

Subsection 7.—Canada and Latin America

Canada has formal diplomatic relations with all 20 Latin American republics and maintains 11 resident diplomatic missions in the area. Canada's relations with these countries have increased slowly but appreciably during the past few years in several fields.

Canada is a member of three inter-American organizations linked with the Organization of American States—the Pan American Institute of Geography and History, the Inter-American Statistical Institute and the Inter-American Radio Office. Since 1931, Canada has been a member of the Postal Union of the Americas and Spain which, although not an OAS organization, is closely related to that body. Canada joined the United Nations Economic Commission for Latin America in 1961. Since 1966, Canada has been a contributing member of the Centre for Latin American Monetary Studies which sponsors the conferences of the Governors of the Central Banks of the American Continent. In 1969, Canada became a member of the Inter-American Centre for Tax Administrators.

Canada has also been officially represented at a growing number of meetings and conferences concerned with Latin American and inter-American affairs. Canadian observer groups have regularly attended the annual ministerial meetings of the Inter-American

President Fidel Sanchez Hernandez of El Salvador, on Mar. 7, 1970, cutting a tape to open the first section of the expanded facilities of the port of Acajutla, made possible by a loan from Canada. The tape is held by the Canadian Ambassador to El Salvador and Costa Rica.

Economic and Social Council, the Pan American Health Organization, the Inter-American Cultural Council and the Inter-American Committee for the Alliance for Progress, all of which are organs of the OAS. In addition, observers are occasionally sent to meetings of the Inter-American Children's Institute and the Inter-American Indian Institute. During the past few years, Canada has been represented in an observer capacity at several high-level OAS meetings, including the Extraordinary Conference held in Buenos Aires in February 1967. Observer delegations have also attended conferences of the Ministers of Education on Economic Planning of Latin America, the meetings of the Board of Governors of the Inter-American Development Bank, the Inter-American Conference of Ministers of Labour and the annual meetings of the Inter-American Tropical Tuna Commission. In addition, Canada acted as host for the American Regional Conference of the International Labour Organization held in Ottawa in September 1966.

In December 1964, the Canadian Government signed an agreement with the Inter-American Development Bank under which Canada agreed to make available $10,000,000 (Cdn.) in development loan funds for use in financing development projects in Latin America. This initial commitment has been followed in each of the five succeeding years by additional commitments of an equal amount bringing the total Canadian development loan funds now available to Latin America to a level of $60,000,000 (Cdn.). As at September 1969, 14 Canadian development loans, totalling $49,163,000, had been approved for financing development projects in the area.

Although the volume of Canadian trade with Latin America is still a small part of total Canadian trade, it has more than trebled since 1946. Argentina, Brazil, Cuba, Mexico and Venezuela rank among the top 20 Canadian export markets. The Canadian Government has directly facilitated Canadian exports to Latin America and indirectly assisted Latin American economic development through the provision of long-term credit under the Export Development Act; these credits now total more than $275,000,000 (Cdn.).

Subsection 8.—Canada and Europe, Africa, the Middle East, the Far East and the Asian Development Bank

Canada and Europe.—While Canadian interest in most areas of the globe is increasing, Canada's relations with Europe remain of special importance. They are deeply rooted in Canada's origins, spring from the common cultural heritage which is shared with Britain and France and also reflect the ties with other European countries from which Canada's population is derived. They have been strengthened by Canada's substantial participation, on European soil, in two World Wars and by Canada's continuing stake in European security.

Canada's relations with Western Europe have developed steadily under the impulse of major Canadian interests in the area. These countries have long been major trading partners for Canada and its chief source of immigrants, and exchanges with them are having an increasingly important effect on Canada's cultural life and the development of its bicultural policy. Moreover, as a result of its growing prosperity and unity, Western Europe is likely to assume a greater importance for Canada because of the influence it wields, the possibility of fruitful co-operation it offers in many fields, and the element of balance it can provide in Canada's external relations. Canada maintains close and extensive bilateral relations with Britain and France in particular, as well as with most other western European countries, and has resident diplomatic missions in almost all of them. As indicated in preceding Subsections, Canada is also, along with a number of western European countries, an active member of NATO and the OECD, as well as of wider international associations such as the General Agreement on Tariffs and Trade (GATT).

In recent years Canada's relations with the Communist countries of Eastern Europe have developed considerably, despite the set-back suffered as a result of the Warsaw Pact intervention in Czechoslovakia. These relations have been characterized by an increase in the volume of trade and tourism, official and semi-official visits in both directions, and agreement on many outstanding issues including Canadian claims. Canada has resident diplomatic missions in Moscow, Prague, Warsaw and Belgrade and has established diplomatic relations with Hungary, Romania and Bulgaria through non-resident Ambassadors. Canada regards the development of mutually advantageous relations and exchanges with these countries as important contributions toward better East–West understanding and the ultimate goal of an equitable settlement of European problems.

Canada and Africa.—Canada in the past had a certain latent interest in Africa through the missionary and commercial activities of Canadians. Formal relations have evolved rapidly over the past 10 years, paralleling the accession to independence of the majority of former colonial territories. The increasing voice of these newly independent states in world affairs, the recognition of their development problems and the importance of the political issues affecting the whole African Continent have sparked this evolution.

Direct relations were first established with former British colonies as they became independent within the Commonwealth. Increasing contacts and diplomatic relations with the newly independent French-speaking African states soon followed in recognition of the bicultural outlook of this country and the important role played by these countries in African affairs. Canada now has diplomatic relations with almost all the independent African states and there are resident Canadian missions in 12 countries on that Continent. Coupled with the development of bilateral diplomatic and commercial relations has been the expansion of a significant program of Canadian aid to Africa. This program, with its English and French components, directs more than $66,000,000 of aid funds annually to the African Continent.

Canada and the Middle East.—For the past quarter-century, the Middle East has been a focus of tension and conflict. During this period, Canada has participated in United Nations efforts to promote calm and stability in the area. It has also contributed substantially to measures to alleviate want among the victims of recurring hostilities.

Canada provided observers to the United Nations Truce Supervision Organization (UNTSO) and was closely associated with the formation of the United Nations Emergency Force (UNEF). Canadian troops served with UNEF in Gaza and Sinai from its inception until its withdrawal in May 1967. Canadian officers continue to serve with UNTSO, which is supervising the Arab–Israeli cease-fire.

Since the establishment of the United Nations Relief and Works Agency for Palestine refugees (UNRWA), Canada has been one of the leading contributors to that Agency. Canadian Government contributions have taken the form of cash, food and other supplies aimed at relieving human suffering in the Middle East. In emergency situations it has provided various forms of assistance through the International Red Cross.

Canada and the Far East.—For many years Canada has had important links, both official and private, with the Far East but over the past decade Canadians have become steadily more aware of their position as a Pacific as well as an Atlantic nation. With the development of modern transport and communications, the Pacific Ocean has ceased to be a barrier and as a result contacts with the countries and peoples of the Far East are increasing rapidly in number and variety. Many of these contacts are based on the growing volume of trade and other economic activity, including tourism; Japan, for example, is Canada's third largest trading partner and bilateral exchanges between the two countries amounted in 1969 to almost $1,120,000,000. The links between Canada and Japan were greatly strengthened by the prominent role of Canada in Japan's 1970 World Exposition at Osaka.

Canada has continued its policy of developing relations with the People's Republic of China, on the premise that Peking should not be isolated but rather encouraged to become more involved in the international community. A series of meetings between Canadian and Chinese officials took place in Stockholm to discuss the terms of possible Canadian recognition of the PRC and the establishment of diplomatic relations between the two countries.

As a member of the International Commissions in Cambodia, Laos and Viet-Nam, Canada has an interest in the region formerly known as Indochina. Until the end of 1969, Canada maintained delegations on the Commissions in all three countries but, following the Cambodia Commission's decision on Dec. 31, 1969 to adjourn *sine die* and leave Cambodia, the Canadian delegation was withdrawn. In view of the inactivity of the Commission in Laos, Canadian representation on the Commission was reduced to a minimum by the beginning of 1970 but the Canadian Government affirmed its full intention of fulfilling its commitments in Laos. In Viet-Nam, Canada has maintained its delegation and is keeping a close watching brief as the talks in Paris proceed among the parties concerned.

Canada's relations with other countries of the Far East are also of increasing importance, a fact reflected in the Pacific Policy Review undertaken by the Government early in 1970. The long-term objectives of regional co-operation and development are fundamental to the future growth and stability of the Pacific region and particularly of Southeast Asia. Canada's interest in the area has been expressed through its participation in the Colombo Plan and, more recently, its membership in the Asian Development Bank, as well as through the presence of Canadian missions in the capitals of most Southeast Asian countries. Following the opening of a Canadian Embassy in Bangkok in late 1967 the groundwork was laid for negotiation of a commercial *modus vivendi* with Thailand, signed in 1969 by Canada's Minister of Industry, Trade and Commerce. The agreement places trade with Thailand on a most-favoured-nation basis and reflects the importance to Canadian exporters of trade with Thailand and with other Southeast Asian countries.

The Canadian Government has expressed its readiness to contribute to an international program for the economic rehabilitation of Viet-Nam after the end of hostilities and, as a member of the Asian Development Bank, is contributing to the Bank's technical assistance program and its special fund. Canada also continues to be a substantial contributor to United Nations agencies concerned with the economic development of Far Eastern countries.

Canada and the Asian Development Bank.—Canada is a member of the Asian Development Bank, a regional development agency established in 1966 with Articles of Agreement patterned broadly after those of the World Bank and the other international financial institutions (see p. 192). The Bank's subscribed capital stock is $1,004,000,000 (U.S.), of which one half was paid in over the five-year period 1966 to 1970. The balance of member-country subscriptions will remain as a callable guarantee against which the Bank may sell its bonds on world capital markets. Asian regional countries, including Japan, Australia and New Zealand, have subscribed $624,000,000 (U.S.) and non-regional countries have subscribed the remaining $380,000,000 (U.S.). Canada's subscription is $25,000,000 (U.S.), of which four instalments of $2,500,000 each have so far been paid toward the 50-p.c. paid-in portion.

For its ordinary operations, to be financed from paid-in equity capital or any resources raised on world capital markets, the Bank expects to follow a pattern similar to that of the World Bank and to lend at rates of interest related to the rate which the Bank itself would have to pay on any bond issues. The present lending rate (December 1969) has been set at $6\frac{7}{8}$ p.c. As of December 1969, the Bank had made available 21 loans from these ordinary resources to Ceylon, Republic of China, Republic of Korea, Malaysia, Pakistan, Philippines, Singapore and Thailand and a number of other projects were under active consideration in these and other regional members.

The Bank also established Special Funds which may be provided to member countries on more flexible terms. Such special operations are financed by voluntary contributions and kept separate and distinct from the Bank's ordinary capital resources. Canada has agreed to make available $25,000,000 (U.S.) over a five-year period for the Bank's special operations. As of December 1969, the Bank had supplied six loans from these Special Funds to Ceylon, Indonesia, Nepal, Philippines and Western Samoa.

Subsection 9.—Canada and the Organization for Economic Co-operation and Development

The Organization for Economic Co-operation and Development (OECD) was established in September 1961, as successor to the Organization for European Economic Co-operation (OEEC), which had been founded in 1948 by the countries of Western Europe to facilitate the reconstruction of their war-shattered economies. With the establishment of the OECD, Canada and the United States and later Japan (May 1964), joined with the countries of Western Europe to form what is today a major intergovernmental forum for consultation and co-operation among the advanced industrialized nations in virtually every major field of economic activity. At present, 22 countries are full members of the Organization, while Yugoslavia has a special status entitling it to participate in certain activities and Australia participates in part of the development activities of the OECD. The Organization's headquarters are in Paris.

The aim of the OECD is to facilitate the formulation of policy approaches which are conducive to the balanced economic growth and social progress of both member and non-member countries. The Organization provides an instrument for assembling and examining knowledge relevant to policy-making and also a forum, meeting the year round, for the exchange and analysis of ideas and experiences from all the member countries. (A recent example of this consultative process is the report on Canadian science policy issued in December 1969, one of a series of reviews of national science policy of OECD member countries.)

The Organization plays a significant role in the harmonization of international economic and financial policy and constitutes the main forum for consultations among developed countries on development assistance questions. The original focus of the OECD upon more traditional economic, trade and development matters has altered and new activities have been undertaken in the areas of agriculture, industry, science and technology, and manpower policy. This broader orientation places increasing emphasis upon the

qualitative, as well as the quantitative, aspects of economic growth and is most recently seen in the Organization's work on the problems of environment and welfare in the context of economic policy. At the first Ministerial Council in 1961, member countries approved a growth target of 50 p.c. for the decade to 1970; that goal has been considerably exceeded and a new growth target will be set for the coming decade.

The OECD brings together government officials as well as representatives of private business, labour unions, universities and other non-governmental bodies in both deliberative and consultative capacities, and provides for international liaison among such groups. Within Canada, liaison has been established with the business community through the Canadian Business and Industry Advisory Committee, which was established in 1962 and comprises representatives of the Canadian Chamber of Commerce, the Canadian Council of the International Chamber of Commerce and the Canadian Manufacturer's Association. Arrangements also exist for consultation with Canadian labour organizations, universities and other non-governmental bodies. Representatives of provincial governments frequently attend OECD meetings when subjects of particular interest to the provinces are being discussed.

Subsection 10.—Canadian External Aid Programs

The Colombo Plan.—The Colombo Plan for Co-operative Economic Development in South and Southeast Asia was conceived at the Commonwealth Meeting of Foreign Ministers held at Colombo, Ceylon, in January 1950. Although the Plan was initiated by Commonwealth governments, it is not exclusively a Commonwealth program. It is designed to assist in the economic development and the raising of living standards of all countries and territories in the general area of South and Southeast Asia. Its membership includes Afghanistan, Australia, Bhutan, Burma, Cambodia, Canada, Ceylon, India, Indonesia, Iran, Japan, Korea, Laos, Malaysia, Maldive Islands, Nepal, New Zealand, Pakistan, the Philippines, Singapore, Thailand, Viet-Nam and the United States; the latter is also engaged in a substantial program of economic aid in the same region.

The Colombo Plan Consultative Committee is the top policy-making body and consists of Ministers of the member governments. The Committee meets each year to survey the Plan's progress, assess the needs, and examine methods for filling in the gaps in resources and speed up the pace of development. The Committee last met in Victoria, British Columbia, in October 1969, and it was agreed at that time to extend the life of the Plan for another six years to 1976. As a consultative body, the Committee makes no collective policy decisions binding on member countries; a Council for Technical Cooperation, on which Canada is represented, meets regularly in Ceylon to develop the technical co-operation program of the Plan. The Colombo Plan Bureau in Ceylon services the Council, records all technical assistance given in the area, develops a program of intra-regional training and is responsible for the Plan's information program.

From the inception of the Plan in 1950 through March 1969, Canada made available a total of $1,108,948,400 in aid for capital and technical assistance projects in South and Southeast Asia. Although 18 countries are now receiving capital assistance from Canada, the largest contributions have so far been made to Ceylon, India, Malaysia and Pakistan. The Canadian contribution consists primarily of direct assistance to various development projects, including equipment for multi-purpose irrigation and hydro-electric projects, power-generating plants, construction and fisheries projects and resources surveys, hospital equipment and cobalt therapy units, as well as educational and laboratory equipment and books. It has also included gifts of raw materials, commodities and foodstuffs, such as industrial metals, asbestos, fertilizer, wheat, wheat flour and butter, from the internal sale of which recipient governments have been able to raise funds to meet local costs of economic development projects.

Under the Technical Assistance Program, up to Sept. 30, 1969, more than 4,919 persons from all countries in the area had come to Canada under Federal Government auspices for

training in a variety of fields, the major ones being public administration and finance, agriculture, co-operatives, engineering, mining and geology, statistics, health education and social welfare. More than 595 Canadian experts had been sent abroad for service in Colombo Plan countries in such fields as fisheries, agriculture, engineering, mining and prospecting, co-operatives, public administration, education and vocational training, and public health. Other Canadians were employed on aerial resources-survey teams and on the installation and operation of capital equipment.

Commonwealth Caribbean Program.—In 1958, when the Federation of the West Indies was being formed, Canada undertook a five-year $10,000,000-program of economic and technical assistance. Following the dissolution of the Federation in 1962, it was decided to continue providing assistance to its component territories—Jamaica, Trinidad and Tobago, Barbados, Guyana, British Honduras and the Leeward and Windward Islands—and, since then, $81,490,000 in loans and grants have been made available to the area, including $22,110,000 under the 1968-69 program.

Under this program, the area and its territories have been provided with two passenger-cargo ships for inter-island transportation, a deep-water wharf at St. Vincent, a residence for the University of the West Indies in Trinidad, port-handling equipment for five harbours and, for several of the smaller islands, schools, warehouses and freshwater supply facilities. Projects under way include a scheme for the expansion and improvement of Trinidad's dairy herds, the provision of rural schools in Jamaica, a prefabricated fish-packing plant, assistance to the University in Guyana, and a five-year program concentrating aid to the Eastern Caribbean region in the fields of education, air transport, water development and agriculture.

A substantial amount of technical assistance has also been given. During the year ended Sept. 30, 1969, training programs were arranged in Canada for over 1,280 students from the Commonwealth Caribbean, the fields of study including agriculture, engineering, fisheries, forestry, medicine and public administration. In addition, 486 Canadians served in the Commonwealth Caribbean, including teachers, soil surveyors, and advisers in the fields of statistics, legal drafting, housing, films, radio broadcasting, postal services, Indian affairs, technical education and harbour management.

Special Commonwealth Africa Assistance Plan.—In the autumn of 1960, the Canadian Government undertook, subject to Parliamentary approval, to contribute $10,500,000 to a Special Commonwealth Africa Assistance Plan (SCAAP) over a three-year period beginning Apr. 1, 1961. This program arose from discussions at the Meeting of Commonwealth Prime Ministers in 1960. Although entirely a Commonwealth scheme, SCAAP is essentially the counterpart in Africa of the Colombo Plan in Asia. The main donor countries are Britain, Canada, Australia and New Zealand. Some of the newer Commonwealth members, particularly India and Pakistan, have been able to provide limited amounts of technical assistance in fields in which they have experience and specialized knowledge. All Commonwealth countries and dependent territories in Africa qualify for development assistance under the SCAAP program.

As occurred in other areas of Canada's expanding aid program, the level of aid to SCAAP increased in 1968-69 to $25,563,500 from $18,810,000 in the previous fiscal year. In 1965, the first Canadian development loan in Africa was extended to Nigeria in the amount of $3,500,000 and, early in 1966, two loans totalling $2,450,000 were granted to Tanzania. A $2,000,000 food-aid grant in the form of wheat flour was made to Ghana.

Technical assistance programs continued to receive major emphasis. During 1968-69, 479 Canadian teachers, professors and technical experts were on assignment in Africa and 588 African students received academic and technical training in Canada.

Canadian capital assistance has concentrated on projects assigned a high priority by the recipient country and in which Canada has a high degree of expertise. These included aerial mapping and survey work, forest inventories, pulp and paper survey and

forest products development, irrigation and land reclamation, medical training and wheat research, geological surveys and mineral exploration, and the provision of equipment for schools and national parks. A major joint Canadian–Ghanaian effort was the building, equipping and staffing of the Trades Training Centre at Accra at an estimated cost to Canada of $1,155,000.

Commonwealth Scholarship and Fellowship Plan.—The proposal to establish a Commonwealth Scholarship and Fellowship Plan was made at the Trade and Economic Conference held at Montreal in September 1958. The Conference envisaged a scheme of 1,000 university scholarships, of which Britain undertook to provide one half and Canada one quarter. The details of the proposed scheme were worked out at the Commonwealth Education Conference at Oxford in 1959. This Plan was designed to enrich the intellectual life of each country of the Commonwealth by enabling an increased number of its brighter students to share in the wide range of educational resources available throughout the Commonwealth and thus promote the equality of educational opportunity at the highest level. During the academic year 1968-69, there were 250 Commonwealth scholars in Canada; 120 were enrolled for doctorate degrees and 107 for master's degrees. The largest group of 101 were studying in the field of physical sciences, which is of direct value to their countries.

In 1965, Research and Visiting Fellowships were introduced as part of the Canadian contribution to this Plan. In 1967, one Research Fellowship was awarded for a full academic year and six Visiting Fellowships for shorter periods. These Fellowships enable senior educationists from other Commonwealth countries to visit Canadian universities and other educational institutions to carry out investigations, study or research in their particular field.

Assistance to French-Speaking States in Africa.—In April 1961, the Canadian Government announced an offer of assistance in the educational field to the French-speaking states in Africa and subsequently appropriated $300,000 for this purpose for each of the years ended Mar. 31, 1962, 1963 and 1965. It was decided at the commencement of this program that emphasis should be placed on the provision of Canadian teachers for Africa. In 1968, an allocation of $12,000,000 was provided to allow for development of a capital assistance program as well as expansion of technical assistance. In 1969, Canadian aid to Francophone Africa totalled $20,483,300. That year, 883 experts served in French-speaking Africa and 764 students received training in Canada.

Early in 1968, a special Canadian Government mission visited some of the French-speaking countries of North and West Africa to look into their development needs and make recommendations for Canadian assistance. A number of projects were agreed to in principle involving a Canadian commitment of at least $30,000,000 over a three-year period (additional to existing aid levels). Included were agricultural projects in Morocco and Tunisia, educational projects for the Ivory Coast, Senegal and Niger, and natural resources assistance to Algeria and Cameroon. Health projects were proposed for Morocco, Tunisia, Cameroon and Niger and power projects for Tunisia and the Ivory Coast.

Latin American Program.—A bilateral Canadian aid program of Latin America was initiated in December 1964, when the Canadian Government concluded an agreement with the Inter-American Development Bank (IADB) by which Canada allocated $10,000,000 in "soft" development loan funds for use in high-priority economic, technical and educational projects in Latin America. Up to Mar. 31, 1969, Canada had allocated $51,500,000, including $11,000,000 for 1968-69. Under the terms of the agreement, the IADB selects and processes proposed loan projects before submitting those considered suitable to the Canadian Government for its approval.

With the approval in the fiscal year 1969-70 of four loan agreements, the cumulative allocation of $50,000,000 for Latin America has been committed. There are 14 loans, of

which half are for pre-investment studies by Canadian experts to determine the economi and technical feasibility of potential projects. Two major loans were made to Brazil, on for the building of an electric power project which will take four years to complete; Cana dian engineering consultants will be retained to advise on the extension and improvement o the electrical distribution system of the region. The other, which will also employ Cana dian consultants, is a study to determine the feasibility of building South America's firs airport for supersonic and jumbo jets. A loan to Colombia will go toward the completio of one of the largest hydro-electric projects on the Continent on the Upper Anchicaya River Another loan will assist the Colombian Government in establishing a national developmen fund to finance studies that will identify development projects and establish their technica and economic feasibility.

In November 1968, the Canadian International Development Agency (see below) tool part in the Ministerial Mission to Latin America, which was designed to take a fresh lool at Canada's relation with countries in that region. As a follow-up to that Mission, a Task Force on Latin America with representatives from several government departments an agencies including CIDA has been established to examine in greater depth the initial obser vations and suggestions of the Mission, and to submit to the Government recommendation on the possible nature and scope of Canada's future relations with Latin American countries

Co-operation with the United Nations and its Specialized Agencies, and with other International Aid Programs.—In addition to the annual contributions made t the United Nations Development Program, which encompasses all UN programs of technica assistance, Canada arranges training programs in this country for individuals studyin under the auspices of the different specialized agencies. This service is also extended t the technical assistance program of the International Co-operation Administration of th United States as well as to other international aid organizations. Up to Mar. 31, 1969 approximately 120 individuals had come to Canada through the various agencies. Assis tance is also given by recruiting Canadians for service with the specialized agencies o specific technical assistance assignments in under-developed countries. Canadian alloca tion to multilateral organizations and agencies amounted to $61,030,900 during 1968-69 making a cumulative total since 1951 of more than $359,212,100.

The Canadian International Development Agency.—Since 1960, the operatio and administration of Canada's external assistance programs have been the responsibility of the External Aid Office, renamed in 1968 the Canadian International Developmen Agency, under the direction of a president. Canada's allocations for external aid in th 1969-70 fiscal year amounted to $338,100,000. Of this, $269,700,000 was for bilatera assistance and $68,400,000 was provided through multilateral agencies such as the Unite Nations, the World Bank Group and regional banks. Canadian bilateral aid continues t be used mainly to provide Canadian goods and services to the less-developed countries although the minimum Canadian content for goods supplied has been reduced from 80 p.c to 66⅔ p.c., permitting aid funds to be used for a much wider range of Canadian good under competitive conditions.

During 1969 there were about 2,000 students and trainees from developing countrie studying in Canada under CIDA auspices. About 700 Canadian teachers are workin overseas through CIDA programs, mainly to improve indigenous educational capabilities Under the technical assistance program, CIDA has some 250 experts abroad carrying out a variety of professional and technical jobs. CIDA in 1969 launched a program to assis voluntary and non-government agencies to increase the scale and scope of their own con tributions to international development. Another important addition to CIDA's activitie during 1969 was the establishment of the Business and Industry Division. In conjunctio with the Department of Industry, Trade and Commerce, the Agency will help Canadia firms identify suitable opportunities for direct participation in the less-developed countrie and use the various programs of special assistance available to them.

International Development Research Centre of Canada.—In May 1970, Royal Assent was given to legislation authorizing the establishment of an International Development Research Centre. Canadian-financed but international in character, the Centre will bring together experts from both the developed and the developing countries and provide them with the facilities and resources to conduct research into the problems of the economically under-developed regions of the world and into the means for applying scientific and technical knowledge to the advancement of those regions.

officers from India, and Uganda, studying University of Toronto sponsorship of the International Development Agency, confer with a Forestry Service at the Petawawa Experiment Station at Chalk River, Ont.

Forces personnel to flood victims in Africa. From Trenton supplies have been many areas of the affected by natural disasters.

Winnipeg, capital city of the Province of Manitoba which in 1970 celebrated the 100th anniversary of its ent into Confederation, has grown in that century from a Hudson's Bay Company trading post with a population o to become Canada's fourth largest city. Within its metropolitan area live well over half a million people a skyline is dramatic evidence of its continuing progress.

Four hundred ai north of Winni another type of nity, the city of Th This is a planned nity, built to accom the employees of t nickel-producing in that area. Afte 14 years of existe city has a popul 23,000 persons wh all the convenien services of dwelle large city.

CHAPTER III.—POPULATION

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

Section 1.—Census of Population

This Section presents in brief form the results of the limited census of population taken on June 1, 1966, with certain comparable data from earlier censuses. The 1966 Census did not include questions on ethnic origin, birthplace, religious denomination, language or mother tongue so that the 1961 data in Subsections 7 to 9 will remain the latest available until the results of the 1971 Census become available.

Detailed census data are published in a series of reports which are obtainable from Information Canada or the Dominion Bureau of Statistics. A list of these publications is available on request from the Information Division of the Dominion Bureau of Statistics.

Plans for the 1971 Census.—The increasingly complex problems of modern-day planning, administration and research have led to escalation in the demand for census information and more statistics will be expected from the 1971 Census than from any previous census. Regional development planning, urban renewal projects, education and manpower programs, poverty and welfare assistance measures, and marketing research analysis are some of the fields in which increasing needs of users have been articulated and evaluated during the planning stages for the 1971 Census.

The original legal purpose related to parliamentary representation remains but the Canadian census of today has far wider uses than to apportion electoral representation. Its importance hinges on its role as an inventory of the people—their numbers and local distribution, age and sex, language, ethnic and religious composition, educational attainment, occupational and industrial employment, income levels, housing and agricultural conditions. These facts are not only vital in themselves but they are especially significant when derived from a census which permits their analysis in relation to one another, and when viewed against the background of history and natural environment. Census data form a standard by which other indicators relating to the nation's well-being can be measured

with real meaning (birth and death rates, criminality, production, trade, wealth, unemployment, migration). Of critical significance are the uses made of the census results in the development of plans and the formulation of social and economic policy by government departments and the business community.

Content of Questionnaires.—In establishing the questions for the 1971 Census, DBS planning committees and work groups worked closely with representatives of other federal departments and agencies, many of whom participated actively in the groups. Careful consideration was given also to submissions received from provincial statistical agencies and from non-governmental agencies representing the business community, universities, town planning experts, etc.

Decisions to include or exclude specific items in the 1971 Census were largely based on: (1) the value of a question, e.g., for the administration of government or other important needs; (2) relative cost; (3) the ease or difficulty in obtaining reliable data; and (4) respondent work loads and tolerance. The evidence available from almost three years of investigation of users' needs together with the evaluation of a field testing program indicate that the 1971 questionnaire content represents a judicious balancing of the essential criteria, that is, it will satisfy the needs of users without imposing an unacceptable burden on respondents.

Changes in the questions for the 1961 Censuses of Population and Housing that have been recommended for 1971 result mainly from demands for more detail within existing subject fields. Education questions have been expanded to include vocational and occupational courses; net income of persons operating farms has been added; a question on language commonly spoken, recommended by the Royal Commission on Bilingualism and Biculturalism, has been added to those on mother tongue and official language; transportation agencies and town planners have effectively argued for inclusion of a question on address of place of work to determine relationships between where people work and where they live; and additional questions have been included on rent, fuel used, and vacation homes.

The Census of Agriculture is taken at the same time as the Censuses of Population and Housing. Questionnaire planning for the 1971 Census of Agriculture began in 1967 with the formation of a federal interdepartmental committee. During early 1968, meetings were held with provincial representatives in each province, with university users, with the federal Department of Agriculture, and with the Statistical Committee of the Farm Equipment Institute. Recommendations were reviewed by the interdepartmental committee and the resulting questionnaire was field-tested in October 1968.

In the 1971 Census of Agriculture, one general questionnaire will replace the four questionnaires used in 1961. Questions on irrigation and on forest products (on a reduced basis) form part of the 1971 general questionnaire. New questions relate to the use of fertilizers and sprays, and to the classification of the part-time work of farm operators by kind of work done. Additional items of farm machinery and equipment are included in the appropriate questions. In summary, farm operators will have approximately the same number of agricultural questions to answer in 1971 as in the preceding decennial Census of 1961. The questionnaire on non-farm holdings is being dropped since their importance is now negligible.

General Methodology.—The development of the methodology for the 1971 Census received its initial impetus from the evaluation of the quality of the 1961 Census and from the study of similar international experience, particularly in the United States. This research identified several important sources of error to which census statistics are subject—respondents may inadvertently or deliberately provide erroneous information, enumerators may influence answers in a number of damaging ways, and additional errors are possible at the data processing stage. The studies indicated that by far the greatest reduction in error could be expected if the role of the enumerator in the data collection process were minimized. Thus it became an objective of the 1971 testing program to develop methods that would reduce the role of the enumerator. These methods, involving self-enumeration, have several variations but a common goal is to have each adult member of every household

answer the census questions pertaining to himself and, where necessary, to consult relevant records. Households or persons who do not answer the census questions or who make significant omissions are contacted by telephone or canvassed by an enumerator. The "do-it-yourself" technique of enumeration is preferable to the traditional method where the enumerator must ask, interpret and record quick answers to intricate questions, given for all members of the household by any responsible member who happens to be home when the enumerator calls.

A series of census field tests, starting with a small pre-test in Ottawa in December 1966, followed by a complete test enumeration of the city of London in September 1967, a test of 5,000 households in Toronto in June 1968, and a rural test in four representative localities across Canada in October 1968, investigated the merits of various methods for the 1971 Census. Two of the tests assessed the advantages of self-enumeration, with questionnaires to be mailed to all householders for their completion and to be returned by mail to a central processing office. In the rural test, a combination of the traditional interview method and enumerator "drop-off" and "pick-up" of questionnaires was employed. Response to these tests indicated the feasibility of employing the self-enumeration techniques. A trial census was held in September 1969 in three localities—Sherbrooke, Que., St. Catharines, Ont., and rural areas centred around Souris, Man. As a result of this intensive testing program, field plans for the 1971 Census call for a system of enumerator drop-off of self-enumeration questionnaires to the householders for their completion and mail-back, to be employed in the larger urban centres. In smaller centres and rural areas, enumerators will drop off the questionnaires (including agriculture, where applicable) but, instead of the mail-back procedure, the enumerator will return to pick up the completed forms. In certain areas, such as the vast northern regions, the coastal outports, institutions, military barracks, etc., which present special problems, the traditional methods of canvasser enumeration will be employed.

Sampling.—Self-enumeration and extensive sampling appear to offer the best combination to achieve the basic aims of the 1971 Census in terms of cost, quality and timeliness of data. New field methods have, as a main objective, the production of data of higher quality through the use of self-enumeration techniques; the degree to which sampling will be employed is directly related to the reduction of costs and to the production of more timely results. Sampling will contribute to error, particularly for tabulation "cells" with very small numbers of observations, but the reduction in error through self-enumeration is expected to be greater. The objective is to minimize total error at acceptable cost and because sampling will make a relatively small contribution to total error but will significantly increase operational efficiency and control, it will reduce cost; also, it will reduce the editing and processing workload and thus make a major contribution to the timely release of census results. In addition, sampling will reduce the burden on the respondent. There have been strong pressures to expand the range of inquiry of the census; without sampling, the additional questions could not have been included in the 1971 Census, partly because of the greater processing burden that would be imposed on DBS and partly because of the response burden that would be imposed on the public.

Sampling has been used as a census-taking technique in Canada since 1941. At that time, its use was restricted to the collection of housing data and a sampling ratio of 10 p.c. was employed. The procedure proved to be effective and was extended to a 20-p.c. ratio in 1951 to provide additional geographical detail. In 1961, its use was further extended to population questions, and a sample of 20 p.c. of households was asked additional questions about income, migration and fertility.

A major extension of this technique will be used in the 1971 Census, employing two questionnaires. A "short" questionnaire, containing only six basic population questions to be answered by everyone and nine housing questions to be answered by household heads, will be completed in two thirds of all households in Canada. A "long" questionnaire, containing the same 15 basic questions plus 20 housing and some 50 socio-economic popula-

tion items, will be answered by the remaining one third of Canadian households. Thus, compared to the 1961 Census, two thirds of all households are being asked substantially fewer questions (averaging eight per person as compared to 20 in 1961), and one third are being asked significantly more questions (averaging 48 per person as compared to 36 in 1961).

A great deal of intensive investigation of the relative costs and benefits of alternative sampling ratios for different combinations of questions preceded the final decision to recommend the one-third sample for all but the basic questions. The more extensive use of sampling is not expected to reduce the availability of 1971 Census statistics as compared to 1961 for either small geographic areas or detailed cross-classifications. Small numbers—5, 10 or even 15—contained in census tabulations have significant error associated with them. The error contributed by sampling will not make results any less acceptable than the results from 100-p.c. coverage. Even where the data are found by the user to be inadequate, they will frequently be sufficient to indicate problem areas and the need for more intensive survey information. By its nature, the census is a multipurpose information medium and, as such, cannot provide a sufficient depth of data for many particular purposes. One important reason why DBS is planning to expand its survey capability is to enable it to meet special information requirements that cannot be satisfied by census statistics.

Data Access and Dissemination of Results.—Plans have been made to improve substantially the effectiveness of the storage and retrieval of census data over the methods used in 1961 and 1966. The computer technology available for the 1971 Census has far greater capability than that of earlier censuses, and the computer experience of 1961 and 1966 is being incorporated into the systems design and into the software and hardware plans for 1971.

In developing new methods and programs to give users more effective and efficient access to census data, emphasis has been placed on extending the range and volume of tabulations to be made available in published, print-out and machine-readable form. Arrangements with provincial governments and other major user groups are being prepared whereby efficient access to census data can be made through better use of user-oriented census data automated files. Also, the extended capabilities of computer technology and programming will be of benefit to the increasing number of census data users requesting a wide and diversified range of special tabulations. For instance, a geographically referenced data storage and retrieval system (GRDSR) is expected to provide rapid and economic access for users requesting special tabulations for non-standard types of areas. User-oriented literature, catalogues and manuals on census data access will be prepared to ease and increase the utilization of the vast potential of the 1971 Census data.

Subsection 1.—Growth and Movement of Population*

Canada's population stood at 20,015,000 in 1966 as against 10,377,000 in 1931 and 5,371,000 in 1901. In the first decade of the century, when the West was being opened up for settlement, the gain of 34 p.c. was greater than in any other censal period. During that decade, about 1,760,000 immigrants entered the country and natural increase amounted to an estimated 1,000,000. However, since the total increase in population was 1,835,328, it is evident that a substantial number of people left the country during the period. In the 1911-21 decade, population growth dropped to 22 p.c. Military losses in the First World War and losses during the influenza epidemic, which together amounted to about 120,000, were factors in this decline. Although the flow of immigrants was reduced during

* An outline of the growth of population in Canada since the beginning of the seventeenth century may be found in Vol. I of the 1931 Census. Other accounts of population growth prior to the present century are included in Vol. I of the 1941 Census, Vol. X of the 1951 Census, and Bulletin 7.1-1 of the 1961 Census.

A special article on Recent Trends in Urbanization and Metropolitan Growth, prepared by Leroy O. Stone, Consultant on Demographic Research, Dominion Bureau of Statistics, appears in the 1969 Year Book, pp. 156-165.

the war years, it had been very heavy immediately preceding the War, so that the total number for the period (1,612,000) was very close to that for the previous censal period. At the same time, emigration was again extremely high and the increase in population amounted to 1,581,306, being an average of 2 p.c. a year compared with 3 p.c. in the 1901-11 period.

In the decade 1921-31, the rate of increase dropped to 18 p.c. Immigration fell to 1,200,000 and emigration was estimated at 1,000,000. Thus the increase in population, which amounted to 1,588,837, was only 229,000 greater than the natural increase. A feature of this period was the rapid growth of population in Western Canada, partly the result of immigration and partly the result of an influx of people from Eastern Canada. During 1931-41, the population increase was just under 11 p.c. During the depressed conditions of the 1930s, marriage and birth rates were significantly lower and only 150,000 immigrants came to Canada although, in addition, 75,000 Canadians returned from the United States. Emigration was also much lower than in the previous decades, amounting to an estimated 250,000. Natural increase was only 1,220,000, the crude birth rate falling from 27 per thousand of the population in the 1921-25 period to 24 per thousand in the succeeding five-year period and to 20 per thousand during much of the 1931-41 decade. During 1941-51, population growth was restored to pre-depression levels. Excluding Newfoundland which became part of Canada in 1949, it amounted to 19 p.c.; including Newfoundland it was 22 p.c. Much of the increase took place in the second half of the decade, reflecting heavy postwar immigration and sharp increases in the marriage and birth rates.

In the 1951-61 period, the population growth rate at 30 p.c. came close to approaching the extremely high rate of the first decade of the century. However, the two periods contrast in many ways. In the early period there was a wider dispersal of population increases as whole regions across the Continent were opened up; in the recent period there was a concentration of growth in urban communities although some spreading of population into newly developed northern areas took place. Natural increase accounted for about 75 p.c. of the growth. Although there was some decline in the death rate, the trend of natural increase reflected very closely that of the crude birth rate which began to rise during the War and remained high throughout the period. Net immigration accounted for the remainder of the increase; during the decade, 1,542,853 immigrants entered the country, more than double the estimated emigration. All provinces gained in population during 1951-61 but their rates of increase varied widely. The greatest increases resulted from a combination of natural increase and net migration which in the two large provinces of Central Canada and the two most westerly provinces accounted for over 87 p.c. of the total actual increase. In contrast, increases in the other six provinces were accounted for entirely by natural increase.

Canada showed a declining rate of population growth over the three five-year periods between 1951 and 1966. In the first period, 1951-56, an outstanding development of economic resources was experienced and, reflecting this expansion, population growth continued at a high level. Slightly more than 2,000,000 persons were added to the population in this period, a 14.8-p.c. increase. Similarly, the 1956-61 period showed a quinquennial rate of increase of 13.4 p.c., corresponding to a numerical increase of 2,157,000. In the 1961-66 period, however, the rate fell to 9.7 p.c., caused largely by a marked downturn in the crude birth rate. The actual number of births declined from 2,362,000 in 1956-61 to 2,249,000 in 1961-66 and immigration, as well, fell off from 760,000 to 550,000. It should be noted, however, that immigration increased each year after the low point of 1961; in 1966 it reached a total of 194,743, more than two and a half times the 1961 figure.

Provincial rates of growth in the 1961-66 period varied due to differences in rates of natural increase and migration among the provinces. Comparing the provinces in order of rate of growth over this period, the population of British Columbia showed an increase of 244,592 or 15 p.c. (roughly 3 p.c. per annum), attributable largely to a net in-migration

of 140,000; this was the only province where the rate of growth due to migration (57 p.c.) exceeded that due to natural increase (43 p.c.). Ontario recorded an increase of 11.6 p.c. between 1961 and 1966, when 724,778 persons were added to its population. Natural increase accounted for 67 p.c. of the total increase. The in-flow of immigrants was the heaviest among the provinces as more than one half of all immigrants in the five-year period gave Ontario as their province of destination.

Population growth in Quebec and Alberta, at 9.9 p.c. and 9.8 p.c., respectively, corresponded closely with the Canada rate. Natural increase in Quebec accounted for close to 88 p.c. of the total and Quebec was the only province other than Ontario and British Columbia to show an increase in net migration in this period. Newfoundland ranked fifth among the provinces in rate of growth, with an increase of 35,543 persons or 7.8 p.c. The remaining provinces all showed rates of growth of less than 1 p.c. per annum, Nova Scotia ranking last with a rate of 2.6 p.c. over the five years. Yukon Territory showed a slight decrease in population in the 1961-66 period (−1.7 p.c.) but in the Northwest Territories the growth rate, at 25.0 p.c., was above the provincial figures.

1.—Numerical Distribution of Population by Province, and Percentage Change from Preceding Census, Census Years 1921-66

NOTE.—Populations for the decennial census years 1871 to 1911 are given in the 1956 Year Book, p. 149. The populations of the Prairie Provinces in 1906, 1916, 1926, 1936 and 1946 will be found in the 1951 edition, p. 131.

Province or Territory	1921	1931	1941	1951	1956	1961	1966
	Numerical Distribution						
Nfld.	[1]	[1]	[1]	361,416	415,074	457,853	493,396
P.E.I.	88,615	88,038	95,047	98,429	99,285	104,629	108,535
N.S.	523,837	512,846	577,962	642,584	694,717	737,007	756,039
N.B.	387,876	408,219	457,401	515,697	554,616	597,936	616,788
Que.	2,360,510	2,874,662	3,331,882	4,055,681	4,628,378	5,259,211	5,780,845
Ont.	2,933,662	3,431,683	3,787,655	4,597,542	5,404,933	6,236,092	6,960,870
Man.	610,118	700,139	729,744	776,541	850,040	921,686	963,066
Sask.	757,510	921,785	895,992	831,728	880,665	925,181	955,344
Alta.	588,454	731,605	796,169	939,501	1,123,116	1,331,944	1,463,203
B.C.	524,582	694,263	817,861	1,165,210	1,398,464	1,629,082	1,873,674
Y.T.	4,157	4,230	4,914	9,096	12,190	14,628	14,382
N.W.T.	8,143	9,316	12,028	16,004	19,313	22,998	28,738
Canada	**8,787,949**[2]	**10,376,786**	**11,506,655**	**14,009,429**	**16,080,791**	**18,238,247**	**20,014,880**
	Percentage Change from Preceding Census						
Nfld.	[1]	[1]	[1]	[1]	14.8	10.3	7.8
P.E.I.	−5.5	−0.7	8.0	3.6	0.9	5.4	3.7
N.S.	6.4	−2.1	12.7	11.2	8.1	6.1	2.6
N.B.	10.2	5.2	12.0	12.7	7.5	7.8	3.2
Que.	17.7	21.8	15.9	21.7	14.1	13.6	9.9
Ont.	16.1	17.0	10.4	21.4	17.6	15.4	11.6
Man.	32.2	14.8	4.2	6.4	9.5	8.4	4.5
Sask.	53.8	21.7	−2.8	−7.2	5.9	5.1	3.3
Alta.	57.2	24.3	8.8	18.0	19.5	18.6	9.9
B.C.	33.7	32.3	17.8	42.5	20.0	16.5	15.0
Y.T.	−51.2	1.8	16.2	85.1	34.0	20.0	−1.7
N.W.T.	25.1	14.4	29.1	33.1	20.7	19.1	25.0
Canada	**21.9**	**18.1**	**10.9**	**21.8**	**14.8**	**13.4**	**9.7**

[1] Populations of Newfoundland (not part of Canada until 1949) were: 1921, 263,033; 1931, 281,500 (estimated); 1941, 303,300 (estimated); and 1945, 321,819. [2] Includes 485 members of the Royal Canadian Navy recorded separately in 1921.

2.—Factors in the Growth of Population, 1961-66

Province or Territory	Population 1961 Census	Births	Deaths	Natural Increase	Immigration	Actual Increase	Net Migration	Population 1966 Census
	No.	No.	No.	No.	No.	No.	No.	No.
fld.	457,853	75,251	15,674	59,577	2,256	35,543	−24,034	493,396
E.I.	104,629	13,577	5,071	8,506	466	3,906	−4,600	108,535
.S.	737,007	91,138	31,612	59,526	6,241	19,032	−40,494	756,039
.B.	597,936	76,943	23,714	53,229	4,460	18,852	−34,377	616,788
ue.	5,259,211	646,621	188,904	457,717	122,897	521,634	+63,917	5,780,845
nt.	6,236,092	752,511	264,659	487,852	287,054	724,778	+236,926	6,960,870
an.	921,686	108,858	38,518	70,340	15,433	41,380	−28,960	963,066
sk.	925,181	112,249	36,558	75,691	8,988	30,163	−45,528	955,344
ta.	1,331,944	181,753	47,146	134,607	29,394	131,259	−3,348	1,463,203
C.	1,629,082	181,467	77,364	104,103	60,822	244,592	+140,489	1,873,674
.T. and N.W.T.	37,626	8,394	1,649	6,745	544	5,494	−1,251	43,120
Canada	**18,238,247**	**2,248,762**	**730,869**	**1,517,893**	**538,555**	**1,776,633**	**+258,740**	**20,014,880**

Table 3 shows the natural increase and the total population increase for Canada and ne provinces in the periods 1951-56, 1956-61 and 1961-66. The balance between the otal increase in population and the natural increase during a period represents the difference etween inward and outward movements, i.e., net migration. The net migration data own for the provinces indicate the net movement of population arising partly from inter- hange of population between provinces and partly from persons entering and leaving the ountry.

3.—Changes in Provincial Population Size through Natural Increase and Migration, 1951-56, 1956-61 and 1961-66

Province	Population Increase according to Census			Natural Increase			Net Migration		
	1951-56	1956-61	1961-66	1951-56	1956-61	1961-66	1951-56	1956-61	1961-66
	No.	No.	No.	No.	No.	No.	No.	No.	No.
ewfoundland	53,658	42,779	35,543	51,851	59,145	59,577	+1,807	−16,366	−24,034
rince Edward Island	856	5,344	3,906	8,959	8,662	8,506	−8,103	−3,318	−4,600
ova Scotia	52,133	42,290	19,032	63,133	65,160	59,526	−11,000	−22,870	−40,494
ew Brunswick	38,919	43,320	18,852	59,774	59,687	53,229	−20,855	−16,367	−34,377
uebec	572,697	630,833	521,634	476,627	521,673	457,717	+96,070	+109,160	+63,917
ntario	807,391	831,159	724,778	430,386	523,107	487,852	+377,005	+308,052	+236,926
anitoba	73,499	71,646	41,380	73,684	76,006	70,340	−185	−4,360	−28,960
askatchewan	48,937	44,516	30,163	86,030	86,294	75,691	−37,093	−41,778	−45,528
lberta	183,615	208,828	131,259	120,961	144,234	134,607	+62,654	+64,594	−3,348
ritish Columbia	233,254	230,618	244,592	98,206	125,585	104,103	+135,048	+105,033	+140,489
Canada[1]	**2,071,362**	**2,157,456**	**1,776,633**	**1,473,211**	**1,674,987**	**1,517,893**	**+598,151**	**+482,469**	**+258,740**

[1] Includes the Yukon and Northwest Territories.

RENDS IN POPULATION GROWTH IN CANADA WITH SPECIAL REFERENCE TO THE DECLINE IN FERTILITY*

Births, deaths and migration are the three components of population change. Each s affected in its own way by a number of factors but the trends of births and deaths, at east, have conformed to a fairly clear pattern of development in the past. In the developing ountries of today, the sharp decline in mortality has been the main factor for the unpre- edented population growth and the variations in growth rates in the past one or two de-

* Prepared by M. V. George, Chief, Demographic Analysis and Research Section, Census Division, Dominion ureau of Statistics. Part of the material used is taken from a draft paper, "The Declining Fertility in Canada", y the author and Evelyne Lapierre.

cades. On the other hand, in the economically developed countries including Canad the variations in fertility have been the main factor for changes in population growth rat in recent decades. In the developed countries, death rates are very low and rather stabl and fertility (birth rates) has become the dominant and problematic factor in populatio change in recent years. Furthermore, the fall of birth rate in the world today, which ha occurred in most of the industrialized countries, is a function of conscious and voluntar restriction of births through improved contraceptive practices. The recent fertility declin in Canada and its causes and implications for current and future population growth an structure should be viewed in this world setting.

The average annual rate of population growth in Canada since 1961 was the secon lowest in this century, the lowest being in the depression decade, 1931-41 (Table I Because natural increase (births minus deaths) and migration are dominant factors i Canada's population change, an examination of the relations between natural increas net immigration and total population change in the period concerned is necessary to asse the direct contribution of each factor. The aim of the following discussion is to portra the dimension of recent population growth in Canada against the background of previou trends, to show how the declining trend has evolved in the 1960s, paying particular attentio to the recent decline in fertility, and to consider its possible continuation in the future.

Total Growth and its Components

The decade 1951-61 had a population growth rate of 30.2 p.c., the second highest rat in this century. The growth rate fell sharply to 9.7 p.c. between 1961 and 1966 and, a cording to the post-censal estimates of population, has since continued to fall; the curren annual rate of growth (1968-69) was only 1.5 p.c. In absolute numbers, the populatio increment between 1961 and 1966 was 1,777,000, the total reaching 20,015,000 in 1966 an an estimated 21,061,000 in 1969. Because of the open nature of Canada's population, i that the population is affected by external migration, natural increase and net migratio combined to produce the observed fall in the nation's growth rate. However, the maj factor of the population growth was the natural increase. Of the total change of 1,777,00 population between 1961 and 1966, 85.4 p.c. was attributable to natural increase and t remainder to net immigration; in 1961-62 and 1962-63 when the amount of net migratio was very low, 94.5 p.c. of the increase was due to natural increase alone.

1.—NUMERICAL AND PERCENTAGE CHANGES IN THE POPULATION OF CANADA, INTERCENSAL PERIODS 1901-66 AND 1966-69

Period	Numerical Change	Percentage Change	Average Annual Percentage Change
	'000		
1901–11	1,835	34.2	3.4
1911–21	1,581	21.9	2.1
1921–31	1,589	18.1	1.8
1931–41	1,130	10.9	1.1
1941–51	2,503	21.8[1]	2.2
1951–61	4,229	30.2	3.0
1951–56	2,071	14.8	3.0
1956–61	2,157	13.4	2.7
1961–66	1,777	9.7	1.9
1966–69 (estimated)	1,046	5.2	1.7

[1] Includes Newfoundland in 1951 but not in 1941; excluding Newfoundland in both years, the change amount to 2,241,000 or 18.6 p.c.

Table II shows clearly the separate contribution of each factor of population growt in recent years. The rates of net migration were obtained by subtracting rates of natur increase from the rates of population increase. Unlike the rates of net migration, th rates of natural increase have declined steadily since 1957. Advances in social and medic care had little effect on the already low crude death rates which remained fairly stab

ince 1956 at an average of between seven and eight per 1,000 population. The infant ortality rate was 20.8 per 1,000 births in 1968. Thus, the death rate is stabilized at uch a low level that further declines cannot be very great unless there is a major break- hrough in controlling the cardiovascular-renal diseases which account for a high pro- ortion of deaths. The low death rate was reflected in the high life-expectancy at irth—68.7 years for males and 75.2 years for females—in 1965-67. On the other hand, ke the trend in the rates of natural increase, there was a parallel decline in the national rude birth rate (births per 1,000 population) since 1957, which was reflected in the crude irth rates of the provinces, with variations in rates of decline. The most spectacular was he phenomenal 45.1-p.c. fall in the crude birth rate in Quebec where 88 p.c. of the popula- ion is Roman Catholic; it declined from 29.7 in 1957, the fourth highest rate among the rovinces in that year, to 16.3 in 1968, the lowest among the provinces. During 1966, hen the rate of decline was the highest, the national birth rate declined by as much as 0.4 p.c. Thus, it is clear that birth rate has been the dynamic element in the recent harp fall in growth rate in Canada.

II.—CRUDE BIRTH, DEATH AND NATURAL INCREASE RATES, MIGRATION RATES AND RATES OF POPULATION INCREASE, 1956-69

Note.—The rates of net migration were obtained by taking the difference between rates of population increase nd natural increase.

Year	Crude Birth Rate	Crude Death Rate	Crude Natural Increase Rate	Rate of Net Migration	Rate of Population Increase (per 1,000)
956	28.0	8.2	19.8	4.6	24.4
957	28.2	8.2	20.0	12.9	32.9
958	27.5	7.9	19.6	8.7	28.3
959	27.4	8.0	19.4	4.2	23.6
960	26.8	7.8	19.0	3.1	22.1
961	26.1	7.7	18.4	2.2	20.6
962	25.3	7.7	17.6	1.3	18.9
963	24.6	7.8	16.8	1.9	18.7
964	23.5	7.6	15.9	3.1	19.0
965	21.3	7.6	13.7	4.7	18.4
966	19.4	7.5	11.9	7.0	18.9
967	18.2	7.4	10.8	8.7	19.5
968	17.6	7.4	10.2	6.4	16.6
969	17.6	7.3	10.3	5.0	15.3

Trends in Birth Rate and Other Fertility Measures

The crude birth rate declined steadily from 28.5 in 1954 to 17.6 in 1968, the lowest rate ever recorded in Canada. Even during the depression period of the 1930s the lowest birth rate recorded was 20.1 in 1937. It is widely known that birth rate is the product of a number of variables and is affected by changes in the age-sex composition of the popula- tion to which it refers. Hence, birth rates standardized for age-sex composition of the population may be used for an analysis of the trend. Although in 1968 the standardized birth rate (standardized with respect to the age distribution of women in 1956) did not deviate from the crude birth rate, for most of the previous years of recent decline in birth rate there were significant differences between the two rates, the standardized rate being higher than the crude birth rate. For example, in 1963 the standardized birth rate, at 26.4, was 7.3 p.c. higher than the corresponding crude birth rate at 24.6. The declining trend in the difference between the crude birth rate and the standardized birth rate sug- gests that the unfavourable effect of age distribution on birth rate is decreasing. Thus, the abrupt fall in crude birth rate in the early part of the 1960s was partly the result of the unfavourable age composition of the population, i.e., women in the childbearing ages. This unfavourable effect may be attributed mainly to: (1) the decline of crude birth rate in the 1920s and 1930s with its impact on the female population of childbearing ages in the 1960s; (2) the increase in the number of births in the postwar period and the consequent

increase in the total population without a corresponding increase in the number of wome in the childbearing ages; and (3) the long-run decline in the death rate, particularly in th very young and old ages where the main reduction of mortality occurred.

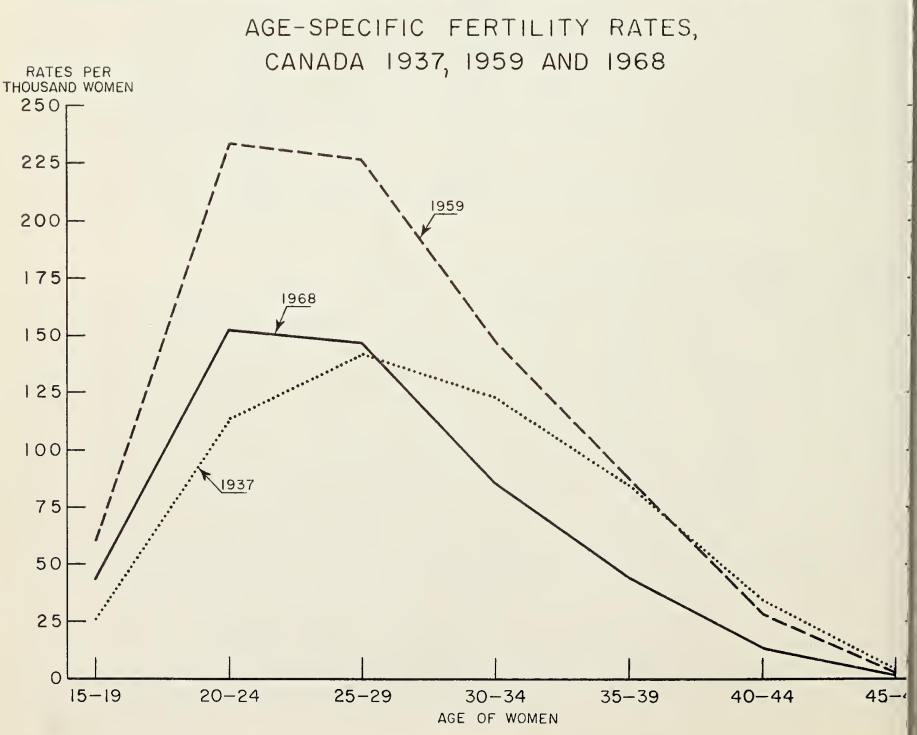
A more effective way of studying the trends and patterns of fertility is to examine th age-specific fertility rates and total fertility rates which are free from the effect of th variations in the proportion of women in the childbearing ages.* Table III and the follow ing chart show clearly the magnitude and pattern of recent fertility decline.

* Age-specific fertility rates give the number of annual births per 1,000 women of reproductive period, by ag Total fertility rate is the sum of the age-specific fertility rates for single years of age of women; it is thus the averag number of children born per woman (or 1,000 women) upon completion of the childbearing period, without mortality

III.—PERCENTAGE CHANGE IN AGE-SPECIFIC FERTILITY RATES AND TOTAL FERTILITY RATES, 1926-37, 1937-59 AND 1959-68

Note.—Excludes Newfoundland for all years and the Yukon and Northwest Territories prior to 1951.

Age Group	Fertility Rates				Annual Average Change		
	1926	1937	1959	1968	1926 to 1937	1937 to 1959	1959 to 1968
15–19	29.0	25.6	60.4	43.4	−1.1	+6.2	−3.1
20–24	139.9	113.6	233.8	152.5	−1.7	+4.8	−3.9
25–29	177.4	142.2	226.7	147.1	−1.8	+2.7	−3.9
30–34	153.8	123.4	147.7	85.8	−1.8	+0.9	−4.7
35–39	114.6	85.3	87.3	44.4	−2.3	+0.1	−5.5
40–44	50.7	34.7	28.5	13.8	−2.9	−0.8	−5.7
45–49	6.0	4.2	2.7	1.4	−2.7	−1.6	−5.3
Total Fertility Rates	**3,357**	**2,646**	**3,935**	**2,441**	**−1.9**	**+2.2**	**−4.2**



According to the fertility rates and standardized birth rates the steady fall of fertility n Canada started after 1959. Between 1959 and 1968 the total fertility rate declined by 8.0 p.c. from 3,935 (per 1,000 women) to 2,441 or, on an average, by 4.2 p.c. per annum. The recent drop in fertility rate was much higher than during the previous period of fertility decline of the 1930s; between 1926 and 1937 the average annual decline was only 1.9 p.c. There was also a difference in the pattern of the latest decline compared with that in the 930s. In the latter period the rate increased with the age of women. The older the women the greater was the decline in fertility; about 54 p.c. of the decline in total fertility ate during this period was due to the decline in age-specific fertility rates for women over 0 years of age. In the recent period, the pattern was just the opposite. There were only inor differences in the rates of fertility decline between young and old ages, which suggested that the recent decline was concentrated in the younger ages. This is due to the fact hat the decline of fertility rates for women in the most reproductive ages (20-30) has a reater effect on the total fertility rate, since absolute levels of age-specific fertility rates re higher for women in those ages than in the ages over 30. About 60 p.c. of the decline n total fertility rate was due to the decline in age-specific fertility rates for women under 0 years age.

The Marriage Factor

The factors influencing fertility are many and varied. Important factors affecting he birth rate during any period are the proportions of women married, the age at which hey marry and the duration of marriage. Unfortunately, adequate data are not available o examine in detail the effect of these factors on the recent fertility decline in Canada. Although there has been a steady increase in the rate of illegitimate births in Canada, most of the births take place within marriage (including births that are illegitimately conceived but occur after marriage); illegitimate live births comprised only 9 p.c. of the otal live births in 1968. Thus, changes and trends in marriage patterns generally affect he annual number of births.

Marriage patterns have undergone some notable changes in Canada over the past 25 r 30 years. After a slight upward trend during the 1930s, the mean age at marriage moved onsistently downward between 1941 and 1961 and then again turned slightly upward, suggesting the emergence of a new trend in the marriage pattern since 1961. The mean age t marriage of women for first marriages (calculated from proportions of single women eported in censuses) increased from 21.4 years in 1961 to 21.7 years in 1966; the median ge at marriage of all brides (calculated from marriage statistics) also shows a slight pward trend in the recent years.

The differences in marriage patterns can be clearly seen in the changes that have ccurred in the proportions of women currently married or single at various ages within he 15-49 age group over the past few years. There was a decrease in the proportions of women married for the age groups under 25 years between 1961 and 1966 from 8.7 p.c. to .6 p.c. for the age group 15-19 and from 59.2 p.c. to 55.4 p.c. for the age group 20-24. A more penetrating analysis than has thus far been undertaken would be required to establish easons for the slight upward trend in age at marriage and in the proportions married for he age groups under 25 years. However, a number of factors may be given as possible explanations, such as the tendency for more young people to go to university, the difficulty or young people to find jobs, the reduction in unplanned marriages following unwanted pregnancies as a result of the use of effective methods of birth control, and the non-availability of suitable male partners. The last factor is known as the "marriage squeeze"* where the males in marriageable ages are outnumbered by females in corresponding ages. The relative excess of brides is the result of the customary practice of women selecting older males for marriage. The conditions of availability were unfavourable for women between 962 and 1966 or for the cohorts of women born between 1942 and 1946 when the ratios

* For details on the phenomenon of "marriage squeeze", see Donald S. Akers, "On Measuring the Marriage Squeeze", *Demography*, Vol. 4, 1967, pp. 907-924.

in the number of males aged 20-24 to the number of females aged 18-20 were less than 100. The unfavourable situation for women may be because female children born in the baby-boom period reached marriageable ages while the appropriate grooms represented the smaller cohorts born during the depression period.

Part of the decline in fertility as measured by the crude birth rate, age-specific and total fertility rates may be attributed to the observed change in marriage pattern and the resulting distribution of population by marital status and marriage duration. With the data available, it is difficult to measure precisely the role of marriage on fertility level and pattern. However, using the data on proportions married among women and marital fertility rates (births per currently married women by age), an approximate estimate of the effect of changes in marriage pattern may be made. Assuming that all births are legitimate, total fertility is a function of marital fertility rates and proportion of women currently married; by keeping one of these factors constant and varying the other, it is possible to approximate the effect of each separately on change in total fertility rate between two points of time. It is assumed for this calculation that the higher the proportions of women married, the higher the risk of childbearing. The results of this calculation indicate that although nuptiality was not the chief factor of fertility decline in the recent years, it contributed to about 9 p.c. of the total fertility decline between 1961 and 1967. In this connection it may be noted that the postwar fertility recovery was due mainly to the marriage factor.

Because change in nuptiality pattern did not seem to have had any prominent effect on the change in total fertility in recent years, the declining birth rate or fertility rate should be attributed mainly to other factors such as: (1) the postponement of births by recent cohorts of women in the childbearing ages; and (2) the control of fertility, or the role played by the contraceptive pill on spacing and limitation of births.

Postponement of Births

With the available data it is difficult to know precisely whether the decline in fertility is indicative of a shift in the timing of childbearing or in the family size norms among couples. Both possibilities should be considered and are indicated in several studies particularly data based on the United States. According to the former view, the decline in fertility is essentially the result of a shift in the timing of births from younger to older ages (postponement) which will have no marked effect on the completed fertility rate. The latter view is that fertility decline reflects a change in the reproductive pattern that will bring about a smaller family size.

One way of assessing the contribution of the postponement factor to the recent declining trend in fertility may be to examine order of birth and age of mother. The data on the average age of mother by parity (order of births) indicate that the average age of mother has gone up since 1964 for parity two and over. For those with one child, the recent trend is downward.

The recent trend in the distribution of births by order of births is consistent with the trend in the average age of mother. Thus, there has been a substantial increase in the proportion of births of first order and a small increase in the second order since 1963. All other orders showed a decrease during the same period. The reduction in childlessness among married couples and the increase in illegitimate rate might have contributed to the rise in first order births. The proportion of married women remaining childless in Canada has dropped from about 15 p.c. from 1906-07 cohorts to slightly above 5 p.c. for the cohorts born in the 1930s.† The decrease in the higher orders (three and over) coupled with an increase in the age of mother suggests the postponement of births by mothers with two or more births. The reduction in fertility for the older women may be attributed to the fact that they married young and have reached the size of family they desire to have and, with the present contraceptive techniques, can now control fertility more effectively.

* See A. Romaniuc, "Fertility Projections by the Cohort Methods for Canada, 1969-1984", Census Division, DBS, 1970 (unpublished).

† A. Romaniuc, *op.cit.*

han could be done in the 1940s and 1950s. Since decline in the proportion of births occurred for higher order births, it is plausible that postponement of births is concentrated among mothers with two or more children.

Further, there appears to have occurred a divergence in the period and cohort fertility ates as a result of postponement of births.* A comparison of the cohort fertility rates or cohorts of women born between 1900 and 1950 with the period fertility rates indicates hat some of the later cohorts of the 1920s and 1930s who had not yet completed their ertility in 1966 had already reached fertility levels much higher than those of the completed ertility† levels of the earlier cohorts. For example, the 1921 cohort had cumulative fertility ates of about 3,038 by age 40 and 3,175 by age 45, which were higher than the completed ates for the 1911 and 1916 cohorts.** Such unusually high fertility rates among younger ohorts of women suggest that there was a temporary inflation in fertility during the latter art of the 1940s and the 1950s which is partly responsible for the recent decline in fertility articularly at the older ages. Cohorts born in 1916-25 (approximately) who were about 5-34 years of age by 1950 and had postponed marriage and childbearing during the depression years, and cohorts born in 1926-35 (approximately) who were 15-24 years of age by 1950 had contributed to the inflation in fertility that occurred in the 1950s. However, hese data do not explain the reason for the recent decline of fertility at the younger ages.

ontrol of Fertility

It has already been shown that the marriage factor has not played any prominent role n the decline of fertility in recent years, suggesting that young couples are either postoning their births or reducing the ultimate size of their families by effective means of birth ontrol. The trend in fertility rates since 1959 fits in well with the hypothesis that the ecline has been due to the widespread use of the contraceptive pill. Two things may be oted before assessing the role of the pill. First, the low fertility level in the 1930s was ot achieved by the use of the pill but by other methods of fertility control then in use. econdly, before the pill came into wide use in Canada (it became available on a prescription basis only in 1961), the fertility rate had already started to decline (since 1959). Thus, is evident that the present decline in fertility level probably could have been achieved y rational fertility control without the use of the pill.

The findings of a study on the use of oral contraception in the United States in 1965, ased on survey data, suggest that the contribution of oral contraception to the recent ecline in the birth rate in that country was substantial for young married couples.‡ Similar ata are not available for Canada, but preliminary results of the recent fertility inquiry n Metropolitan Toronto showed that nearly one half of the women using contraceptives ere using the oral pill and that about two thirds of the present oral users began to use hem for the first time after January 1965. It was also observed that women with no hildren and those with four or more children had a clear preference for the pill over the ther methods of contraception.*** Such a preference for the pill among contraceptive sers is consistent with the fertility decline among young and older women observed earlier. erhaps a major effect of the use of the pill might have been longer postponement of births nd avoidance of unwanted conceptions mainly because of its greater efficiency than other ontraception methods.

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* Period measures of fertility deal with the childbearing experience of persons during a particular year or specified eriod of time. A cohort measure, on the other hand, deals with the childbearing experience of a particular group persons, identified either by a common time of marriage or common time of birth through their entire reproductive pan.

† The "completed fertility rate", which is sometimes called "average size of family", is the average number births (per 1,000 women) that an actual group of women has by the end of the childbearing span (age 50 in most ases).

** The figures are taken from unpublished material prepared by Jacques Henripin for the 1961 Census monoraph on fertility in Canada.

‡ Norman B. Ryder and Charles F. Westoff, "Use of Oral Contraception in the United States, 1965", *Science*, 53 (September, 1966), 1199–1205.

*** J. F. Kantner *et al.*, "Oral Contraception and Fertility Decline in Canada, 1958-1968: A First Look at a rucial Component in the Argument", Univerity of Western Ontario, London, Ontario, 1968 (mimeographed).

Prospects for the Future

The future course of fertility in Canada depends mainly upon whether the curren completed fertility rate will remain constant, fall or rise in future. It is difficult to predic whether young couples will have fewer children than the cohorts preceding or whether thei lowered fertility may be made up in later years. It is possible that postponement of birth may lead to revising expectations downward with the new norms regarding family forma tion, and consequent decline in ultimate family size. Whatever the precise reason for the declining trend in fertility, family size of not more than three children has become the accepted pattern among young couples. The findings on fertility expectations based o surveys conducted in the United States support such a view. According to one study "virtually all American couples consider at least two children as desirable, and most achiev that number unless they are subfecund".* In several papers, Freedman has stated tha about 90 p.c. consider two to four children "ideal for the American family".† Further more, a potent factor likely to affect the future fertility in both its quantity and its timin is the increase in the reproductive competence, whether by way of development of bette methods or enlarge knowledge of available contraceptive procedures, or greater diligence i their employment.** Thus, when children are born and how many will be born appear t be increasingly rational decisions by couples, based on immediate economic and soci circumstances.

As for absolute number of births and crude birth rate, they are likely to increase in th near future even if the current fertility rates do not increase, because of the expected in crease in the size of the future childbearing population. According to the DBS curren population estimates and most recent population projections (Series B), between 1968 an 1971 the number of women in the most reproductive age groups, 20-24 and 25-29, wi increase from 829,000 to 952,200 and from 682,800 to 795,000, respectively.‡

Assuming that the 1968 age-specific fertility rates will remain constant until 197 expected births and crude birth rate were calculated for 1971 using the projected tot population and women aged 15-49. The results show that between 1968 and 1971 th annual number of births will increase from 364,310 to 401,280 and the birth rate from 17. to 18.5. Thus, it may be expected that the continuing decline in birth rate will abate i the near future, resulting in a slight upward trend in the rates of natural increase and tot population growth. According to the projected figures (Series B), the increase in th population of Canada will be 8.14 p.c. between 1969 and 1974, and 28.1 p.c. between 196 and 1984, which is equal to an average annual increase of 1.9 p.c. during the next 15 yea as against the current annual increase of about 1.5 p.c. It may be noted, however, th the anticipated rate of population increase for the next 15 years is much lower than th of the past 15 years.

Subsection 2.—Urban and Rural Population

All cities, towns and villages of 1,000 or more population, whether incorporated not, were classed as urban in the 1966 Census; also classed as urban were the urbaniz fringes of these centres, where the population of the city or town together with its urba ized fringe amounted to 10,000 or more and where the density of the fringe was at lea 1,000 persons per square mile. The remainder of the population living outside of t urban centres and suburban fringes was classed as rural.

Table 4 shows that, by 1966, close to 74 p.c. of the population of Canada lived urban areas, according to the census definition. The degree of urbanization in the pro

* Larry Bumpass and Charles F. Westoff, "The Prediction of Completed Fertility", *Demography*, Vol. 6, No. 1969, p. 446.

† Ronald Freedman, "American Studies of Factors Affecting Fertility", *International Population Conferen New York, 1961*, International Union for the Scientific Study of Population, London: John Wright, 1963, I, pp. 67-7

** Norman B. Ryder and Charles F. Westoff, "Fertility Planning Status: United States, 1965", *Demograp* Vol. 6, No. 4, 1969, p. 443.

‡ "Population Projections for Canada, 1969-1984", *Analytical and Technical Memorandum No. 4*. Census Divisi DBS. Processed April 1970.

nces, as measured by the portion classified as urban, ranged from 80 p.c. in Ontario to 7 p.c. in Prince Edward Island. However, although almost three quarters of the Canadian population was urbanized, only three of the ten provinces had surpassed this level of urbanization—Ontario with its 80 p.c., Quebec with 78 p.c. and British Columbia with 5 p.c. Of the seven remaining provinces, five were over 50 p.c. urbanized—Newfoundland, Nova Scotia, New Brunswick, Manitoba and Alberta.

In Table 4 the rural populations of the provinces are further classified as rural non-farm or rural farm. For census purposes, persons living on holdings of one or more acres with sales of agricultural products of $50 or more in the previous year are classed as residing in rural farm areas. Thus, the population living on "farms" would include some persons not connected with farming operations and who derived their income from non-agricultural pursuits. In 1966, among the provinces, Saskatchewan and Prince Edward Island had the highest percentages of rural farm population—29 p.c. and 28 p.c., respectively.

.—Number and Percentage of the Population classified as Urban and Rural (Non-farm and Farm), by Province, Census 1966

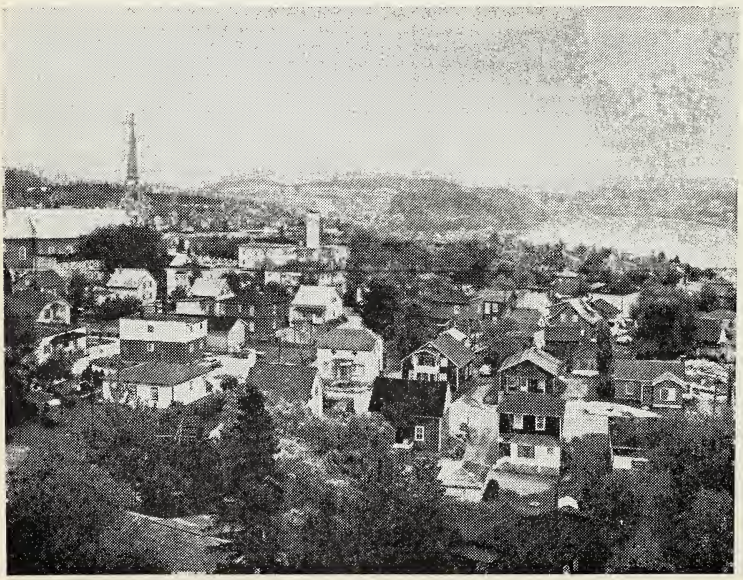
Province or Territory	Urban		Rural						Total Population
			Non-farm		Farm		Total		
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.
Newfoundland	266,689	54.1	218,252	44.2	8,455	1.7	226,707	45.9	493,396
Prince Edward Island	39,747	36.6	37,947	35.0	30,841	28.4	68,788	63.4	108,535
Nova Scotia	438,907	58.1	271,881	36.0	45,251	6.0	317,132	41.9	756,039
New Brunswick	312,225	50.6	253,059	41.0	51,504	8.4	304,563	49.4	616,788
Quebec	4,525,114	78.3	762,164	13.2	493,567	8.5	1,255,731	21.7	5,780,845
Ontario	5,593,440	80.4	885,735	12.7	481,695	6.9	1,367,430	19.6	6,960,870
Manitoba	646,048	67.1	157,146	16.3	159,872	16.6	317,018	32.9	963,066
Saskatchewan	468,327	49.0	207,375	21.7	279,642	29.3	487,017	51.0	955,344
Alberta	1,007,407	68.8	178,198	12.2	277,598	19.0	455,796	31.2	1,463,203
British Columbia	1,410,493	75.3	377,984	20.2	85,197	4.5	463,181	24.7	1,873,674
Yukon Territory	6,828	47.5	7,492	52.1	62	0.4	7,554	52.5	14,382
Northwest Territories	11,534	40.1	17,174	59.8	30	0.1	17,204	59.9	28,738
Canada	**14,726,759**	**73.6**	**3,374,407**	**16.9**	**1,913,714**	**9.6**	**5,288,121**	**26.4**	**20,014,880**

Subsection 3.—Populations of Incorporated Cities, Towns and Villages

The population of all incorporated cities, towns and villages is classified by size group in Table 5 for the census years 1951, 1956, 1961 and 1966. During the 1961-66 period, the number of such centres increased by 57 and the proportion of the total population living in them rose from 60.7 p.c. to 63.1 p.c.

The trend toward an increased concentration of the population in the larger urban centres continued in the 1961-66 period. In the five-year interval, the number of incorporated cities and towns of 50,000 or over rose from 29 to 40 and the proportion of the total population in these larger centres increased from 29.0 p.c. to 32.9 p.c. In contrast,

The centre of Toronto like the cores of other large Canadian cities has taken on an entirely new visage during the past few years. Old familiar and once prominent buildings are surrounded and dwarfed by sky-reaching structures.



Chicoutimi North, a c about 13,000 is part fairly large concent of people living on shores of the Sag River, which flows ward from Lac St. into the St. Lawrence about 150 miles ea Quebec City. Their lihood is based on the pulp and paper, power and aluminu dustries of the are

lthough urban centres of 1,000 to 50,000 in size also increased in number from 893 to 021, the proportion of the population residing in these centres fell from 29.3 p.c. in 1961 o 27.9 p.c. in 1966. Similarly, the number of incorporated towns and villages under 1,000 ose from 1,039 to 1,057 in the 1961-66 period but their proportion of the population fell lightly from 2.4 p.c. to 2.2 p.c.

5.—Populations of Incorporated Cities, Towns and Villages classified by Size Group, Census Years 1951, 1956, 1961 and 1966

Size Group	1951			1956		
	Incorporated Centres	Population	P.C. of Total Population	Incorporated Centres	Population	P.C. of Total Population
	No.	No.		No.	No.	
Over 500,000	2	1,697,274	12.1	2	1,777,145	11.1
Between—						
400,000 and 500,000	—	—	—	—	—	—
300,000 and 400,000	1	344,833	2.5	1	365,844	2.3
200,000 and 300,000	3	646,076	4.6	4	942,849	5.9
100,000 and 200,000	4	572,756	4.1	4	576,156	3.6
50,000 and 100,000	9	588,436	4.2	12	769,323	4.8
25,000 and 50,000	24	802,380	5.7	27	929,624	5.8
15,000 and 25,000	34	636,713	4.5	43	853,341	5.3
10,000 and 15,000	29	347,410	2.5	44	527,802	3.3
5,000 and 10,000	100	720,077	5.1	117	830,289	5.2
3,000 and 5,000	119	457,492	3.3	130	497,818	3.1
1,000 and 3,000	409	698,092	5.0	450	772,013	4.8
Under 1,000	1,049	429,683	3.1	1,039	443,922	2.8
Totals	**1,783**	**7,941,222**	**56.7**	**1,873**	**9,286,126**	**57.7**

Size Group	1961			1966		
	Incorporated Centres	Population	P.C. of Total Population	Incorporated Centres	Population	P.C. of Total Population
	No.	No.		No.	No.	
Over 500,000	2	1,863,469	10.2	2	1,886,839	9.4
Between—						
400,000 and 500,000	—	—	—	1	410,375	2.1
300,000 and 400,000	1	384,522	2.1	2	707,500	3.5
200,000 and 300,000	5	1,338,294	7.3	3	845,867	4.2
100,000 and 200,000	4	568,056	3.1	6	997,051	5.0
50,000 and 100,000	17	1,134,214	6.2	26	1,740,446	8.7
25,000 and 50,000	41	1,431,909	7.9	43	1,438,388	7.2
15,000 and 25,000	43	862,101	4.7	52	1,019,205	5.1
10,000 and 15,000	61	743,474	4.1	65	781,611	3.9
5,000 and 10,000	132	932,936	5.1	125	898,136	4.5
3,000 and 5,000	151	579,201	3.2	165	637,117	3.2
1,000 and 3,000	465	793,465	4.4	471	818,003	4.1
Under 1,000	1,039	437,207	2.4	1,057	445,246	2.2
Totals	**1,961**	**11,068,848**	**60.7**	**2,018**	**12,625,784**	**63.1**

The Canadian cities and towns having a population of over 50,000 in 1966 are listed n Table 6. Also shown are the years of their incorporation as cities or towns and comparative population figures for 1951, 1956, 1961 and 1966 which are given according to the boundaries in those respective years

6.—Incorporated Cities and Towns with Populations of Over 50,000 at the 1966 Census, with Comparable Population Figures for 1951, 1956 and 1961

NOTE.—The asterisk (*) indicates a boundary change since the preceding census. Population totals are based on areas as incorporated at each of these dates.

City or Town and Province	Year of Incorporation	1951	1956	1961	1966
		No.	No.	No.	No.
Brantford, Ont.	1877	36,727	51,869*	55,201*	59,854*
Burlington, Ont.	1915	6,017	9,127*	47,008*	65,941*
Calgary, Alta.	1893	129,060	181,780*	249,641*	330,575*
Dartmouth, N.S.	1961	15,037	21,093	46,966*	58,745
Edmonton, Alta.	1904	159,631	226,002*	281,027*	376,925*
Guelph, Ont.	1879	27,386	33,860*	39,838*	51,377*
Halifax, N.S.	1841	85,589	93,301	92,511	86,792
Hamilton, Ont.	1846	208,321	239,625*	273,991*	298,121*
Hull, Que.	1875	43,483	49,243*	56,929*	60,176*
Jacques-Cartier, Que.	1951	22,450	33,132	40,807*	52,527
Kingston, Ont.	1846	33,459	48,618*	53,526	59,004
Kitchener, Ont.	1912	44,867	59,562*	74,485*	93,255*
Laval (Ville de), Que.[1]	1965	37,843	69,410	124,741	196,088
London, Ont.	1855	95,343	101,693*	169,569*	194,416
Montreal, Que.	1832	1,021,520	1,109,439*	1,191,062*	1,222,255*
Montreal N., Que.	1959	14,081	25,407	48,433	67,806
Niagara Falls, Ont.	1903	22,874	23,563	22,351	56,891*
Oakville, Ont.	1857	6,910	9,983	10,366	52,793*
Oshawa, Ont.	1924	41,545	50,412	62,415	78,082
Ottawa, Ont.	1855	202,045	222,129	268,206	290,741
Peterborough, Ont.	1905	38,272	42,698*	47,185*	56,177*
Quebec, Que.	1832	164,016	170,703	171,979	166,984
Regina, Sask.	1903	71,319	89,755*	112,141*	131,127*
Saint John, N.B.	1785	50,779	52,491	55,153	51,567
St. Catharines, Ont.	1876	37,984	39,708*	84,472*	97,101
St. John's, Nfld.	1888	52,873	57,078	63,633	79,884*
St. Laurent, Que.	1955	20,426	38,291*	49,805*	59,479*
St. Michel, Que.	1952	10,539	24,706	55,978	71,446*
Sarnia, Ont.	1914	34,697	43,447	50,976	54,552
Saskatoon, Sask.	1906	53,268	72,858*	95,526*	115,892*
Sault Ste Marie, Ont.	1912	32,452	37,329	43,088*	74,594*
Sherbrooke, Que.	1875	50,543	58,668*	66,554	75,690
Sudbury, Ont.	1930	42,410	46,482	80,120*	84,888*
Toronto, Ont.	1834	675,754	667,706*	672,407	664,584
Trois-Rivières, Que.	1857	46,074	50,483*	53,477*	57,540*
Vancouver, B.C.	1886	344,833	365,844*	384,522	410,375
Verdun, Que.	1912	77,391	78,262*	78,317	76,832
Victoria, B.C.	1862	51,331	54,584	54,941	57,453
Windsor, Ont.	1892	120,049	121,980	114,367*	192,544*
Winnipeg, Man.	1873	235,710	255,093*	265,429*	257,005*

[1] All the municipalities on Île Jésus were amalgamated to form the city of Ville de Laval in 1965.

The 961 incorporated urban centres in Canada having a population of 1,000 or mor at the time of the 1966 Census are listed alphabetically by province in Table 7 and thei populations given for the two census years 1961 and 1966. Each population figure is fo the boundary in effect at the time of the indicated census.

7.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over, by Province, Census Years 1961 and 1966

NOTE.—Population tables are based on areas as incorporated at each of these dates; a change in municipal boundary since the preceding census is indicated by an asterisk (*). Urban centres are designated in this table by the following abbreviations: c.=city, t.=town and v.=village.

Province and Incorporated Centre	Population	
	1961 Census	1966 Census
	No.	No.
Newfoundland—		
Badger, t.	[1]	1,192
Baie Verte, t.	958	2,144*
Bay Roberts, t.	1,328	3,455*
Bishop's Falls, t.	[1]	4,127
Bonavista, t.	[1]	4,192
Botwood, t.	3,680	4,277*
Burgeo, t.	1,454	1,682
Burin, t.	1,144	1,167
Carbonear, t.	4,234	4,584
Catalina, t.	1,110	1,089
Channel–Port aux Basques, t.	4,141	5,692*
Clarenville, t.	1,541	1,813*
Corner Brook, c.	25,185	27,116
Deer Lake, t.	3,998	4,289
Dunville, t.	[1]	1,622
Fogo, t.	1,152	1,150
Fortune, t.	1,360	1,703
Freshwater, t.	1,396	1,310
Gander, t.	5,725	7,183
Glenwood, t.	[1]	1,000
Glovertown, t.	1,197	1,246
Grand Bank, t.	2,703	3,143
Grand Falls, t.	[1]	7,451
Happy Valley, t.	[1]	4,215
Harbour Breton, t.	1,076	1,442
Harbour Grace, t.	2,650	2,811
Hare Bay, t.	[1]	1,410
Lewisporte, t.	2,702	2,892
Marystown, t.	1,691	1,894
Mount Pearl, t.	2,785	4,428
Placentia, t.	1,610	1,847
Ramea, t.	970	1,160
Roddickton, t.	[1]	1,227
St. Alban's, t.	[1]	1,715
St. Anthony, t.	1,820	2,269
St. George's, t.	[1]	2,046
St. John's, c.	63,633	79,884*
St. Lawrence, t.	2,095	2,130
Springdale, t.	[1]	2,773
Stephenville, t.	6,043	5,910
Stephenville Crossing, t.	2,209	2,433*
Twillingate, t.	[1]	1,374
Upper Island Cove, t.	[1]	1,790
Wabana, t.	8,026	7,884*
Wesleyville, t.	1,285	1,238*
Windsor, t.	5,505	6,692
Prince Edward Island—		
Charlottetown, c.	18,318	18,427*
Kensington, t.	884	1,022
Montague, t.	1,126	1,289
Parkdale, v.	1,735	2,071
St. Eleanors, v.	1,002	1,419
Sherwood, v.	1,580	2,407
Souris, t.	1,537	1,443
Summerside, t.	8,611	10,042*
Nova Scotia—		
Amherst, t.	10,788	10,551
Antigonish, t.	4,344	4,856
Berwick, t.	1,282	1,311
Bridgetown, t.	1,043	1,060
Bridgewater, t.	4,497	4,755
Nova Scotia—concluded		
Canso, t.	1,151	1,190
Clark's Harbour, t.	945	1,002
Dartmouth, c.	46,966	58,745
Digby, t.	2,308	2,305
Dominion, t.	2,999	2,960
Glace Bay, t.	24,186	23,516
Halifax, c.	92,511	86,792
Hantsport, t.	1,381	1,438
Inverness, t.	2,109	2,022
Kentville, t.	4,612	5,176
Liverpool, t.	3,712	3,607
Lockeport, t.	1,231	1,284
Louisbourg, t.	1,417	1,617
Lunenburg, t.	3,056	3,154
Mahone Bay, t.	1,103	1,296
Middleton, t.	1,921	1,765
Mulgrave, t.	1,145	1,124
New Glasgow, t.	9,782	10,489
New Waterford, t.	10,592	9,725
North Sydney, t.	8,657	8,752
Oxford, t.	1,471	1,426
Parrsboro, t.	1,834	1,835
Pictou, t.	4,534	4,254
Port Hawkesbury, t.	1,346	1,866
Shelburne, t.	2,408	2,654
Springhill, t.	5,836	5,380*
Stellarton, t.	5,327	5,191
Sydney, c.	33,617	32,767
Sydney Mines, t.	9,122	9,171
Trenton, t.	3,140	3,229*
Truro, t.	12,421	13,007
Westville, t.	4,159	4,147
Windsor, t.	3,823	3,765
Wolfville, t.	2,413	2,533
Yarmouth, t.	8,636	8,319
New Brunswick—		
Bathurst, c.	5,494	15,256*
Campbellton, c.	9,873	10,175
Caraquet, t.	[1]	3,047
Chatham, t.	7,109	8,136
Dalhousie, t.	5,856	6,107
Dieppe, t.	4,032	3,847
Edmundston, c.	12,791	12,517
Fredericton, c.	19,683	22,460
Grand Falls, t.	3,983	4,158
Hartland, t.	1,025	1,034
Lancaster, c.	13,848	15,836
Marysville, t.	3,233	3,572
Milltown, t.	1,892	1,952
Moncton, c.	43,840	45,847
Newcastle, t.	5,236	5,911
Oromocto, t.	12,170	14,112
St. Andrews, t.	1,531	1,719
St. George, t.	1,133	1,104
Saint John, c.	55,153	51,567
St. Leonard, t.	1,666	1,635
St. Stephen, t.	3,380	3,285
Sackville, t.	3,038	3,186
Shediac, t.	2,159	2,134
Shippegan, t.	1,631	1,741
Sussex, t.	3,457	3,607*
Tracadie, t.	[1]	2,018
Woodstock, t.	4,305	4,442

[1] Incorporated after June 1, 1961.

7.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over, by Province, Census Years 1961 and 1966—continued

Province and Incorporated Centre	Population		Province and Incorporated Centre	Population	
	1961 Census	1966 Census		1961 Census	1966 Census
	No.	No.		No.	No.
Quebec—			**Quebec**—continued		
Acton Vale, t.	3,957	4,489	Danville, t.	2,562	2,578
Alma, c.	13,309	22,195*	Delson, t.	2,075	2,601
Amos, t.	6,080	6,838	Desbiens, t.	1,970	1,979
Amqui, t.	3,659	3,854	Deschaillons sur St. Laurent, v.	1,283	1,265
Anjou, t.	9,511	22,477	Deschambault, v.	1,056	1,040
Arthabaska, t.	2,977	3,907	Deschênes, v.	2,090	1,791
Arvida, c.	14,460	15,342*	Deux Montagnes, c.	7,274	8,069*
Asbestos, t.	11,083	10,534	Disraëli, v.	3,079	3,111
Aylmer, t.	6,286	7,231	Dolbeau, t.	6,052	6,630
Bagotville, t.	5,629	5,876	Dollard des Ormeaux, t.	1,248	12,297
Baie Comeau, t.	7,956	12,236	Donnacona, t.	4,812	4,815
Baie de Shawinigan, v.	1,085	1,002	Dorion, t.	4,996	6,033*
Baie d'Urfé, t.	3,549	4,061	Dorval, c.	18,592	20,905
Baie St. Paul, t.	4,674	4,702	Drummondville, c.	27,909	29,216
Barraute, v.	1,199	1,318	Drummondville S., t.	[1]	8,725
Beaconsfield, c.	10,064	15,702	Drummondville W., v.	2,057	2,682
Beauceville, t.	1,645	1,905	Duberger, t.	4,707	8,489*
Beauceville E., t.	1,920	2,222*	East Angus, t.	4,756	4,909
Beauharnois, c.	8,704	8,810	East Broughton Station, v.	1,136	1,093
Beauport, c.	9,192	11,742*	Farnham, c.	6,354	6,752
Beaupré, t.	2,587	2,926*	Ferme Neuve, v.	1,971	1,944
Bécancour, t.	320	8,336*	Forestville, t.	1,529	1,572
Bedford, t.	2,855	2,926	Fort Coulonge, v.	1,823	1,846
Beebe Plain, v.	1,363	1,346	Francoeur, v.	968	1,060*
Bélair, t.	[1]	3,408	Gagnon, t.	1,900	3,999
Beloeil, t.	6,283	10,152*	Gaspé, t.	2,603	2,938
Bernierville, v.	2,706	2,477	Gatineau, t.	13,022	17,727*
Berthierville, t.	3,708	3,943*	Giffard, c.	10,129	12,585
Bic, v.	1,177	1,198	Gracefield, v.	670	1,054*
Black Lake, t.	4,180	4,186	Granby, c.	31,463	34,349*
Bois des Filion, v.	2,499	3,219	Grande Rivière, v.	1,176	1,216
Boucherville, t.	7,403	15,338*	Grand'Mère, c.	15,806	16,407
Bourlamaque, t.	3,344	4,122	Greenfield Park, t.	7,807	12,288*
Bromptonville, t.	2,726	2,826	Grenville, v.	1,330	1,501
Brossard, t.	3,778	11,884*	Hampstead, t.	4,557	6,158
Brownsburg, v.	3,617	3,596	Hauterive, t.	5,980	11,366
Buckingham, t.	7,421	7,227*	Hébertville Station, v.	1,257	1,179
Cabano, t.	2,695	2,528	Hudson, v.	1,671	1,642
Cadillac, t.	1,077	1,370	Hudson Heights, v.	1,540	1,543
Campbell's Bay, v.	1,024	1,084	Hull, c.	56,929	60,176*
Candiac, t.	1,050	3,178*	Huntingdon, t.	3,134	3,167
Cap Chat, v.	2,035	2,026	Iberville, t.	7,588	8,400
Cap de la Madeleine, c.	26,925	29,433	Île Perrot, t.	3,106	3,578
Carignan, t.	[1]	2,975	Jacques-Cartier, c.	40,807	52,527
Causapscal, t.	3,463	3,210	Joliette, c.	18,088	19,188
Chambly, c.	3,737	10,798*	Jonquière, c.	28,588	29,663
Chambord, v.	1,188	1,142	Kénogami, c.	11,816	11,534
Chandler, t.	3,406	3,608	Knowlton, v.	1,396	1,486
Chapais, t.	2,363	2,459	Labelle, v.	1,224	1,307
Charlemagne, v.	3,068	3,569	Lac au Saumon, v.	1,548	1,393
Charlesbourg, c.	14,308	24,926*	Lac Etchemin, v.	2,297	2,492
Charny, t.	4,189	4,762	Lachine, c.	38,630	43,155
Châteauguay, t.	7,570	12,460*	Lachute, c.	7,560	10,215
Châteauguay Centre, t.	7,591	14,096	Lac Mégantic, t.	7,015	6,958
Châteauguay Heights, t.	1,231	1,238*	Lacolle, v.	1,187	1,177
Chibougamau, t.	4,765	8,902	Laflèche, c.	10,984	13,433
Chicoutimi, c.	31,657	32,526*	Lafontaine, v.	1,556	2,346
Chicoutimi N., c.	11,229	12,814	La Guadeloupe, v.	1,728	1,877
Chute aux Outardes, v.	1,336	1,921	La Malbaie, t.	2,580	4,307
Clermont, v.	3,114	3,175	L'Annonciation, v.	1,042	2,040
Coaticook, t.	6,906	6,984*	La Pérade, v.	1,184	1,117
Como E., v.	807	1,025	La Pocatière, t.	3,086	3,470
Contrecoeur, v.	2,007	2,301	La Prairie, t.	7,328	8,122
Cookshire, t.	1,412	1,599	La Providence, v.	4,251	4,712
Côte St. Luc, c.	13,266	20,546	LaSalle, c.	30,904	48,322
Courville, t.	4,670	5,724	La Sarre, t.	3,944	4,798
Cowansville, t.	7,050	10,692*	L'Assomption, t.	4,448	4,662
Crabtree, v.	1,313	1,509			

[1] Incorporated after June 1, 1961.

7.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over, by Province, Census Years 1961 and 1966—continued

Province and Incorporated Centre	Population	
	1961 Census	1966 Census
	No.	No.
uebec—continued		
La Tuque, t.	13,023	13,554
Laurentides, t.	1,698	1,653
Lauzon, c.	11,533	12,877
Laval (Ville de), c.[2]	124,741	196,088
Lavaltrie, v.	1,034	1,189
LeMoyne, t.	8,057	8,888
Lennoxville, t.	3,699	3,977
L'Épiphanie, v.	2,663	2,664
Léry, t.	1,957	2,130
Les Saules, t.	4,098	6,242*
Lévis, c.	15,112	15,627*
L'Isletville, v.	1,184	1,234
L'Isle Verte, v.	1,517	1,484
Longueuil, c.	24,131	25,593
Loretteville, c.	6,522	9,465*
Lorraine, t.	197	1,627*
Louiseville, t.	4,138	4,236*
Luceville, v.	1,419	1,564*
Macamic, t.	1,614	1,770
Magog, c.	13,139	13,797
Malartic, t.	6,998	6,606
Maniwaki, t.	6,349	6,404
Maple Grove, t.	1,412	1,600
Marieville, t.	3,809	4,368*
Masson, v.	1,933	2,249
Matagami, t.	[1]	2,244
Matane, t.	9,190	11,109*
McMasterville, v.	2,075	2,456
Melocheville, v.	1,666	1,667
Mistassini, t.	3,461	3,884*
Montebello, v.	1,486	1,350
Mont Joli, t.	6,178	6,366
Mont Laurier, t.	5,859	6,140
Mont St. Hilaire, t.	2,911	4,807*
Montmagny, c.	6,850	12,241*
Montmorency, t.	5,985	5,541
Montreal (Ville de), c.	1,191,062	1,222,255*
Montreal E., t.	5,884	5,779
Montreal N., c.	48,433	67,806
Montreal W., t.	6,446	6,612
Mount Royal, t.	21,182	21,845
Murdochville, t.	2,951	3,028
Napierville, v.	1,812	2,010*
Nazareth, v.	[1]	1,965
Neufchâtel, t.	[1]	6,618
Nicolet, t.	4,441	4,707
Noranda, c.	11,477	11,521
Normandin, v.	1,838	2,174
Notre Dame de Lorette, v.	3,961	5,691
Notre Dame d'Hébertville, v.	1,604	1,493
Notre Dame des Laurentides, t.	[1]	4,446
Notre Dame du Lac, v.	1,695	1,545
Omerville, v.	1,094	1,131
Ormstown, v.	1,527	1,479
Orsainville, t.	4,236	7,068*
Outremont, c.	30,753	30,881*
Papineauville, v.	1,300	1,410
Pierrefonds, c.	12,171	27,924*
Pierreville, v.	1,559	1,529
Pincourt, t.	2,685	5,656
Plessisville, t.	6,570	7,238
Pointe au Pic, v.	1,333	1,246
Pointe aux Trembles, c.	21,926	29,888
Pointe Calumet, v.	514	1,157
Pointe Claire, c.	22,709	26,784
Pointe Gatineau, t.	8,854	11,053
Pont Rouge, v.	2,988	3,229
Port Alfred, t.	9,066	9,551*
Port Cartier, t.	3,458	3,537
Portneuf, t.	1,380	1,388
Préville, t.	1,001	1,299
Price, v.	3,094	2,939
Princeville, t.	3,174	3,589*
Quebec, c.	171,979	166,984
Rawdon, v.	2,388	2,539
Repentigny, t.	9,139	14,976
Richelieu, v.	1,612	1,663
Richmond, t.	4,072	4,014
Rigaud, t.	1,990	1,959
Rimouski, c.	17,739	20,330*
Rimouski E., v.	1,581	2,043
Rivière du Loup, c.	10,835	11,637
Rivière du Moulin, t.	4,386	4,542*
Robertsonville, v.	1,156	1,226
Roberval, c.	7,739	8,552*
Rock Island, t.	1,608	1,596
Rosemère, t.	6,158	6,429*
Rouyn, c.	18,716	18,581
Roxboro, t.	6,298	7,930*
St. Agapitville, v.	1,117	1,347*
Ste. Agathe des Monts, t.	5,725	6,010
St. Ambroise, v.	1,576	1,559
St. André Avellin, v.	1,066	1,002
St. André E., v.	1,183	1,201
Ste. Anne de Beaupré, v.	1,878	1,523
Ste. Anne de Bellevue, t.	4,044	5,334*
St. Anselme, v.	1,131	1,237
St. Antoine des Laurentides, v.	3,005	4,401*
St. Basile S., v.	1,709	1,843
St. Boniface de Shawinigan, v.	917	2,670*
St. Bruno, v.	1,158	1,216
St. Bruno de Montarville, t.	6,760	10,712
St. Casimir, v.	1,386	1,378
St. Césaire, t.	2,097	2,240*
St. Chrysostome, v.	972	1,048
St. Coeur de Marie, v.	1,302	1,312
Ste. Croix, v.	1,363	1,347
St. Cyrille, v.	1,138	1,177
St. Damase, v.	879	1,072
St. David de l'Auberivière, t.	[1]	2,962
St. Émile, v.	1,806	2,104
St. Eustache, t.	5,463	7,319*
St. Félicien, t.	5,133	5,104*
St. Félix de Valois, v.	1,399	1,428
Ste. Foy, c.	29,716	48,298*
St. Fulgence, v.	1,094	1,053
St. Gabriel de Brandon, v.	3,425	3,464*
St. Gédéon, v.	930	1,030
Ste. Geneviève, t.	2,397	2,596
St. Georges (Beauce Co.), t.	4,082	6,680*
St. Georges (Champlain Co.), v.	1,775	1,992
St. Georges W., t.	4,755	5,538
St. Germain de Grantham, v.	1,015	1,138
St. Henri, v.	782	1,106*
St. Hubert, t.	14,380	17,215*
St. Hyacinthe, c.	22,354	23,781*
St. Jacques, v.	2,038	2,000
St. Jean, c.	26,988	27,784*
St. Jean Chrysostome, t.	[1]	1,633
St. Jean de Boischatel, v.	1,576	1,648
St. Jean Eudes, v.	2,873	2,721
St. Jérôme (Lac St. Jean Co.), v.	1,962	2,089*
St. Jérôme (Terrebonne Co.), c.	24,546	26,511*
St. Joseph (St. Hyacinthe Co.), v.	3,799	4,879*

[1] Incorporated after June 1, 1961.

[2] All the cities and towns on Île Jésus were amalgamated to form the ty of Ville de Laval in 1965.

7.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over, by Province, Census Years 1961 and 1966—continued

Province and Incorporated Centre	Population	
	1961 Census	1966 Census
	No.	No.
Quebec—continued		
St. Joseph de Beauce, t.	2,484	2,805*
St. Joseph de la Rivière Bleue, v.	1,540	1,406
St. Joseph de Sorel, t.	3,588	3,725
St. Jovite, v.	2,692	3,083
St. Lambert, c.	14,531	16,003
St. Laurent, c.	49,805	59,479*
St. Léonard, c.	4,893	25,328*
St. Luc, t.	[1]	3,581
Ste. Madeleine, v.	964	1,097
St. Marc des Carrières, v.	2,622	2,681
Ste. Marie, t.	3,662	4,192
St. Michel, c.	55,978	71,446*
St. Nicolas, t.	[1]	1,635
St. Pacôme, v.	1,242	1,198
St. Pamphile, t.	[1]	3,516
St. Pascal, v.	2,144	2,216
Ste. Philomène, t.	[1]	3,234
St. Pie, v.	1,434	1,652
St. Pierre, t.	6,795	7,066
St. Raphaël, v.	1,134	1,116
St. Raymond, t.	3,931	4,318
St. Rédempteur, v.	1,035	1,287
St. Rémi, t.	2,276	2,221
St. Romuald d'Etchemin, c.	[1]	7,375
Ste. Rosalie, v.	1,255	1,618*
St. Sauveur des Monts, v.	1,702	1,908
St. Siméon, v.	1,197	1,145
Ste. Thècle, v.	2,009	1,881
Ste. Thérèse, c.	11,771	15,628*
St. Timothée, v.	1,003	1,252
St. Tite, t.	3,250	3,113
St. Zacharie, v.	1,361	1,349
Sacré Coeur de Jésus, v.	1,108	1,305
Sayabec, v.	2,314	2,228
Schefferville, t.	3,178	3,086
Scotstown, t.	1,038	1,010
Senneterre, t.	3,246	3,567*
Senneville, v.	1,262	1,413
Sept Îles, c.	14,196	18,950
Shawbridge, v.	1,034	1,038
Shawinigan, c.	32,169	30,777
Shawinigan S., t.	12,683	12,250
Shawville, v.	1,534	1,652
Sherbrooke, c.	66,554	75,690
Sillery, c.	14,109	14,737
Sorel, c.	17,147	19,021*
Stanstead Plain, v.	1,116	1,183
Sutton, t.	1,755	1,877
Tadoussac, v.	1,083	1,059
Temiscaming, t.	2,517	2,799
Templeton, v.	2,965	3,267
Terrebonne, t.	6,207	7,480
Thetford Mines, c.	21,618	21,614
Thurso, t.	3,310	3,332
Tracy, t.	8,171	10,918
Tring Jonction, v.	1,214	1,297
Trois Pistoles, t.	4,349	4,710*
Trois-Rivières, c.	53,477	57,540*
Trois-Rivières W., t.	[1]	6,345
Valcourt, v.	843	1,114
Val David, v.	1,118	1,281
Val d'Or, t.	10,983	12,147
Vallée Jonction, v.	1,405	1,388
Valleyfield (Salaberry de), c.	27,297	29,111*
Val St. Michel, t.	1,290	1,204
Vanier, t.	8,733	9,362
Varennes, v.	2,240	2,382
Vaudreuil, t.	897	3,105*
Quebec—concluded		
Verchères, v.	1,768	1,918
Verdun, c.	78,317	76,832
Victoriaville, t.	18,720	21,320
Ville Marie, t.	1,710	1,962
Villeneuve, t.	1,934	2,829
Warwick, t.	2,487	2,577
Waterloo, t.	4,543	4,765
Waterville, t.	1,330	1,423
Weedon Centre, v.	1,426	1,389
Westmount, c.	25,012	24,107
Windsor, t.	6,589	6,496
Yamachiche, v.	1,186	1,179
Ontario—		
Acton, t.	4,144	4,416
Ajax, t.	7,755	9,412
Alexandria, t.	2,597	2,864
Alfred, v.	1,195	1,228
Alliston, t.	2,884	3,149
Almonte, t.	3,267	3,550
Amherstburg, t.	4,452	4,641
Arnprior, t.	5,474	5,693
Arthur, v.	1,200	1,243
Athens, v.	1,015	1,001
Aurora, t.	8,791	10,424
Aylmer, t.	4,705	4,501
Ayr, v.	1,016	1,134
Bancroft, v.	2,615	2,153
Barrie, c.	21,169	24,010
Barry's Bay, v.	1,439	1,388
Beamsville, t.	2,537	3,886
Beaverton, v.	1,217	1,241
Belle River, v.	1,854	2,280
Belleville, c.	30,655	32,784
Blenheim, t.	3,151	3,355
Blind River, t.	4,093	3,611
Bobcaygeon, v.	1,210	1,255
Bolton, v.	2,104	2,344
Bowmanville, t.	7,397	8,511
Bracebridge, t.	2,927	3,041
Bradford, t.	2,342	2,522
Brampton, t.	18,467	36,266
Brantford, c.	55,201	59,851
Bridgeport, v.	1,672	2,111
Brighton, v.	2,403	2,766
Brockville, c.	17,744	19,266
Burlington, t.	47,008	65,944
Caledonia, t.	2,198	2,722
Campbellford, t.	3,478	3,444
Cannington, v.	1,024	1,041
Capreol, t.	3,003	3,099
Cardinal, v.	1,944	1,944
Carleton Place, t.	4,796	4,815
Casselman, v.	1,277	1,222
Cayuga, v.	897	1,038
Chalk River, v.	1,135	1,085
Chatham, c.	29,826	32,424
Chelmsford, t.	2,559	2,756
Chesley, t.	1,697	1,688
Chesterville, v.	1,248	1,258
Chippawa, v.	3,256	3,877
Clinton, t.	3,491	3,288
Cobalt, t.	2,209	2,211
Cobourg, t.	10,646	11,526
Cochrane, t.	4,521	4,777
Colborne, v.	1,336	1,495
Collingwood, t.	8,385	8,477

[1] Incorporated after June 1, 1961.

7.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over by Province, Census Years 1961 and 1966—continued

Province and Incorporated Centre	Population		Province and Incorporated Centre	Population	
	1961 Census	1966 Census		1961 Census	1966 Census
	No.	No.		No.	No.
Ontario—continued			**Ontario**—continued		
Coniston, t.	2,692	2,692	Listowel, t.	4,002	4,526
Copper Cliff, t.	3,600	3,505	Little Current, t.	1,527	1,441
Cornwall, c.	43,639	45,766	Lively, t.	3,211	3,169
Crystal Beach, v.	1,886	1,857	London, c.	169,569	194,416
Deep River, t.	5,377	5,573	Long Branch, v.	11,039	12,980
Delhi, t.	3,427	3,503*	L'Orignal, v.	1,189	1,238
Deseronto, t.	1,797	1,836	Lucan, v.	986	1,011
Dresden, t.	2,346	2,372*	Lucknow, v.	1,031	1,096
Dryden, t.	5,728	6,732	Madoc, v.	1,347	1,385
Dundas, t.	12,912	15,501	Markdale, v.	1,090	1,113
Dunnville, t.	5,181	5,402	Markham, v.	4,294	7,769
Durham, t.	2,180	2,410	Marmora, v.	1,381	1,331
Eastview, c.[1]	24,555	24,269	Massey, t.	1,324	1,223
Eganville, v.	1,549	1,478	Mattawa, t.	3,314	3,143
Elmira, t.	3,337	4,047*	Meaford, t.	3,834	3,866
Elmvale, v.	957	1,031	Midland, t.	8,656	10,129*
Elora, v.	1,486	1,644	Milton, t.	5,629	6,601*
Englehart, t.	1,786	1,790	Milverton, v.	1,111	1,122
Erin, v.	1,005	1,195	Mimico, t.	18,212	19,431
Espanola, t.	5,353	5,567	Mitchell, t.	2,247	2,371
Essex, t.	3,428	3,742	Morrisburg, v.	1,820	1,938
Exeter, t.	3,047	3,226	Mount Forest, t.	2,623	2,859*
Fenelon Falls, v.	1,359	1,404	Napanee, t.	4,500	4,603
Fergus, t.	3,831	4,376*	Newcastle, v.	1,272	1,684
Fonthill, v.	2,324	2,790	New Hamburg, t.	2,181	2,438
Forest, t.	2,188	2,151	New Liskeard, t.	4,896	5,259
Forest Hill, v.	20,489	23,135	Newmarket, t.	8,932	9,758
Fort Erie, t.	9,027	9,793	New Toronto, t.	13,384	13,234
Fort Frances, t.	9,481	9,524	Niagara, t.	2,712	3,113
Fort William, c.[2]	45,214	48,208	Niagara Falls, c.	22,351	56,891*
Frankford, v.	1,642	1,823	North Bay, c.	23,781	23,635
Galt, c.	27,830	33,491*	Norwich, v.	1,703	1,692
Gananoque, t.	5,096	5,237*	Norwood, v.	1,060	1,093
Georgetown, t.	10,298	11,832	Oakville, t.	10,366	52,793*
Geraldton, t.	3,375	3,658	Orangeville, t.	4,593	5,588
Glencoe, v.	1,156	1,185	Orillia, t.[3]	15,345	15,295
Goderich, t.	6,411	6,710*	Oshawa, c.	62,415	78,082
Gravenhurst, t.	3,077	3,257	Ottawa, c.	268,206	290,741
Grimsby, t.	5,148	6,634	Owen Sound, c.	17,421	17,769
Guelph, c.	39,838	51,377*	Palmerston, t.	1,554	1,631
Hagersville, v.	2,075	2,169	Paris, t.	5,820	6,271*
Haileybury, t.	2,638	3,117	Parkhill, t.	1,169	1,126
Hamilton, c.	273,991	298,121*	Parry Sound, t.	6,004	5,901
Hanover, t.	4,401	4,665*	Pembroke, t.	16,791	16,262
Harriston, t.	1,631	1,748	Penetanguishene, t.	5,340	5,349
Harrow, t.	1,787	1,941	Perth, t.	5,360	5,559
Havelock, v.	1,260	1,224	Petawawa, v.	4,509	5,574
Hawkesbury, t.	8,661	9,188*	Peterborough, c.	47,185	56,177*
Hearst, t.	2,373	2,882	Petrolia, t.	3,708	3,929
Hespeler, t.	4,519	5,381	Pickering, v.	1,755	1,991
Huntsville, t.	3,189	3,342*	Picton, t.	4,862	5,027*
Ingersoll, t.	6,874	7,249	Point Edward, v.	2,744	2,903
Iroquois, v.	1,136	1,141	Port Arthur, c.[2]	45,276	48,340
Iroquois Falls, t.	1,681	1,834	Port Colborne, c.	14,886	17,986*
Kapuskasing, t.	6,870	12,617*	Port Credit, t.	7,203	8,475*
Keewatin, t.	2,197	2,089	Port Dover, t.	3,064	3,220*
Kemptville, t.	1,959	2,182	Port Elgin, t.	1,632	2,058*
Kenora, t.	10,904	11,295	Port Hope, t.	8,091	8,656*
Kincardine, t.	2,841	2,823	Port McNicoll, v.	1,053	1,208
Kingston, c.	53,526	59,004	Port Perry, v.	2,262	2,651
Kingsville, t.	3,041	3,545*	Port Stanley, v.	1,460	1,488
Kitchener, c.	74,485	93,255*	Powassan, t.	1,064	1,071
Lakefield, v.	2,167	2,242	Prescott, t.	5,366	5,176
Leamington, t.	9,030	9,554*	Preston, t.	11,577	13,380
Leaside, t.	18,579	21,250	Rainy River, t.	1,168	1,149
Levack, t.	3,178	3,025	Renfrew, t.	8,935	9,502
Lindsay, t.	11,399	12,090	Richmond, v.	1,215	1,391

[1] Vanier City as of Jan. 1, 1969.
[2] The cities of Fort William and Port Arthur amalgamated to become Thunder Bay on Jan. 1, 1970.
[3] Orillia became a city on Jan. 1, 1969.

7.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over, by Province, Census Years 1961 and 1966—continued

Province and Incorporated Centre	Population	
	1961 Census	1966 Census
	No.	No.
Ontario—concluded		
Richmond Hill, t.	16,446	19,773
Ridgetown, t.	2,603	2,678
Rockcliffe Park, v.	2,084	2,246
Rockland, t.	3,037	3,513*
Rodney, v.	1,041	1,090
St. Catharines, c.	84,472	97,101
St. Clair Beach, v.	1,460	1,746
St. Mary's, t.	4,482	4,750
St. Thomas, c.	22,469	22,983
Sarnia, c.	50,976	54,552
Sault Ste Marie, c.	43,088	74,594*
Seaforth, t.	2,255	2,241*
Shelburne, v.	1,239	1,354
Simcoe, t.	8,754	9,929*
Sioux Lookout, t.	2,453	2,667
Smiths Falls, t.	9,603	9,876
Smooth Rock Falls, t.	1,131	1,191
Southampton, t.	1,818	1,759
Stayner, t.	1,671	1,772
Stirling, v.	1,315	1,354
Stittsville, v.	1,508	1,651
Stoney Creek, t.	6,043	7,243
Stouffville, v.	3,188	3,883*
Stratford, c.	20,467	23,068*
Strathroy, t.	5,150	5,786
Streetsville, t.	5,056	5,884
Sturgeon Falls, t.	6,288	6,430
Sudbury, c.	80,120	84,888*
Sutton, v.	1,470	1,594
Swansea, v.	9,628	9,703
Tavistock, v.	1,232	1,294
Tecumseh, t.	4,476	4,922
Thamesville, v.	1,054	1,067
Thessalon, t.	1,725	1,688
Thornbury, t.	1,097	1,149
Thorold, t.	8,633	8,843
Tilbury, t.	3,030	3,304*
Tillsonburg, t.	6,600	6,526*
Timmins, t.	29,270	29,303
Toronto, c.	672,407	664,584
Trenton, t.	13,183	13,746*
Tweed, v.	1,791	1,747
Uxbridge, t.	2,316	2,621
Vankleek Hill, t.	1,735	1,662
Victoria Harbour, v.	1,066	1,114
Walkerton, t.	3,851	4,380
Wallaceburg, t.	7,881	10,696*
Wasaga Beach, v.	431	1,382*
Waterdown, v.	1,844	1,935
Waterford, t.	2,221	2,379
Waterloo, c.	21,366	29,889*
Watford, v.	1,293	1,299
Welland, c.	36,079	39,960
Weston, t.	9,715	11,047
Wheatley, v.	1,362	1,547
Whitby, t.	14,685	17,273
Wiarton, t.	2,138	2,034
Winchester, v.	1,429	1,450
Windsor, c.	114,367	192,544*
Wingham, t.	2,922	2,974
Woodbridge, v.	2,315	2,473
Woodstock, c.	20,486	24,027*
Wyoming, v.	880	1,024
Manitoba—		
Altona, t.	2,026	2,129
Beauséjour, t.	1,770	2,214
Manitoba—concluded		
Boissevain, t.	1,303	1,473
Brandon, c.	28,166	29,981
Brooklands, t.	4,369	4,181
Carberry, t.	1,113	1,265
Carman, t.	1,930	1,922
Dauphin, t.	7,374	8,655*
East Kildonan, c.	27,305	28,796
Flin Flon, t. (Man. and Sask.)	11,104	10,201
Gimli, t.	1,841	2,262
Killarney, t.	1,729	1,836*
Melita, t.	1,038	1,101*
Minnedosa, t.	2,211	2,305
Morden, t.	2,793	3,097*
Morris, t.	1,370	1,339
Neepawa, t.	3,197	3,229
Portage la Prairie, c.	12,388	13,012
Rivers, t.	1,574	1,685
Roblin, t.	1,368	1,617*
Russell, t.	1,263	1,511
St. Boniface, c.	37,600	43,214
St. James, c.	33,977	35,685
St. Vital, c.	[1]	29,528
Selkirk, t.	8,576	9,157
Souris, t.	1,841	1,829*
Steinbach, t.	3,739	4,648*
Stonewall, t.	1,420	1,577
Swan River, t.	3,163	3,470
The Pas, t.	4,671	5,031*
Transcona, c.	14,248	19,761
Tuxedo, t.	1,627	2,480
Virden, t.	2,708	2,933
West Kildonan, c.	20,077	22,240
Winkler, t.	2,529	2,570*
Winnipeg, c.	265,429	257,005*
Saskatchewan—		
Assiniboia, t.	2,491	2,872*
Battleford, t.	1,627	1,766
Biggar, t.	2,702	2,755
Broadview, t.	1,008	1,051*
Canora, t.	2,117	2,734
Carlyle, t.	982	1,064
Carnduff, t.	957	1,194
Carrot River, t.	930	1,092*
Creighton, t.	1,729	1,710
Davidson, t.	928	1,066
Esterhazy, t.	1,114	3,190*
Estevan, c.	7,728	9,062*
Eston, t.	1,695	1,548
Flin Flon, t.	[2]	[2]
Foam Lake, t.	933	1,165*
Fort Qu'Appelle, t.	1,521	1,600
Gravelbourg, t.	1,499	1,626*
Grenfell, t.	1,256	1,369
Gull Lake, t.	1,038	1,235*
Herbert, t.	1,008	1,040
Hudson Bay, t.	1,601	1,957*
Humboldt, t.	3,245	3,979
Indian Head, t.	1,802	1,891*
Kamsack, t.	2,968	2,982*
Kerrobert, t.	1,220	1,237
Kindersley, t.	2,990	3,534*
Langenburg, t.	757	1,269
Leader, t.	1,211	1,236
Lloydminster, c. (Sask. and Alta.)	5,667	7,071*
Maple Creek, t.	2,291	2,359

[1] Incorporated after June 1, 1961. [2] See Manitoba.

7.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over, by Province, Census Years 1961 and 1966—continued

Province and Incorporated Centre	Population 1961 Census	Population 1966 Census
	No.	No.
Saskatchewan—concluded		
Meadow Lake, t.	2,803	3,375*
Melfort, t.	4,039	4,386
Melville, c.	5,191	5,690*
Moose Jaw, c.	33,206	33,417*
Moosomin, t.	1,781	2,141
Nipawin, t.	3,836	3,963
North Battleford, c.	11,230	12,262
Outlook, t.	1,340	1,499
Oxbow, t.	1,359	1,569*
Preeceville, t.	924	1,202
Prince Albert, c.	24,168	26,269*
Radville, t.	1,067	1,053
Regina, c.	112,141	131,127*
Rosetown, t.	2,450	2,658
Rosthern, t.	1,264	1,414*
Saskatoon, c.	95,526	115,892*
Shaunavon, t.	2,154	2,318
Shellbrook, t.	1,042	1,088
Swift Current, c.	12,186	14,485*
Tisdale, t.	2,402	2,914*
Unity, t.	1,902	2,154
Wadena, t.	1,311	1,404
Wakaw, t.	974	1,032*
Watrous, t.	1,461	1,459
Weyburn, c.	9,101	9,000
Whitewood, t.	900	1,069
Wilkie, t.	1,612	1,603
Wolseley, t.	1,031	1,048
Wynyard, t.	1,686	1,956*
Yorkton, c.	9,995	12,645*
Alberta—		
Athabasca, t.	1,487	1,551
Barrhead, t.	2,286	2,592
Beaverlodge, t.	897	1,083*
Bellevue, v.	1,323	1,174
Blairmore, t.	1,980	1,779
Bonnyville, t.	1,736	2,237*
Bow Island, t.	1,122	1,160
Brooks, t.	2,827	3,354
Calgary, c.	249,641	330,575*
Camrose, c.	6,939	8,362*
Canmore, v.	[1]	1,445
Cardston, t.	2,801	2,721
Castor, t.	1,025	1,090
Claresholm, t.	2,143	2,569*
Coaldale, t.	2,592	2,541*
Cold Lake, t.	1,307	1,289*
Coleman, t.	1,713	1,507*
Devon, t.	1,418	1,283
Didsbury, t.	1,254	1,586
Drayton Valley, t.	3,854	3,352*
Drumheller, c.	2,931	3,574*
Edmonton, c.	281,027	376,925*
Edson, t.	3,198	3,788*
Fairview, t.	1,506	1,884*
Fort Macleod, t.	2,490	2,709
Fort McMurray, t.	1,186	2,614*
Fort Saskatchewan, t.	2,972	4,152*
Grand Centre, t.	1,493	1,731*
Grande Prairie, c.	8,352	11,417*
Grimshaw, t.	1,095	1,376*
Hanna, t.	2,645	2,633
High Prairie, t.	1,756	2,241
High River, t.	2,276	2,239
Hinton, t.	3,529	4,307
Innisfail, t.	2,270	2,531*
Alberta—concluded		
Lac La Biche, t.	1,314	1,490
Lacombe, t.	3,029	3,035
Leduc, t.	2,356	2,856*
Lethbridge, c.	35,454	37,186*
Lloydminster, c.	[2]	[2]
Magrath, t.	1,338	1,220*
Manning, t.	896	1,179
McLennan, t.	1,078	1,104*
Medicine Hat, c.	24,484	25,574
Olds, t.	2,433	2,999*
Peace River, t.	2,543	4,087*
Picture Butte, t.	978	1,013*
Pincher Creek, t.	2,961	2,882*
Ponoka, t.	3,938	4,421*
Provost, t.	1,022	1,328
Raymond, t.	2,362	1,950
Redcliff, t.	2,221	2,141
Red Deer, c.	19,612	26,171*
Redwater, t.	1,135	1,041
Rimbey, t.	1,266	1,502*
Rocky Mountain House, t.	2,360	2,446
St. Albert, t.	4,059	9,736*
St. Paul, t.	2,823	3,543*
Slave Lake, t.	468	1,716*
Spirit River, t.	890	1,034*
Stettler, t.	3,638	3,988*
Stony Plain, t.	1,311	1,397
Swan Hills, t.	643	1,414
Sylvan Lake, t.	1,381	1,332
Taber, t.	3,951	4,584
Three Hills, t.	1,491	1,452*
Two Hills, t.	826	1,056*
Valleyview, t.	1,077	1,827*
Vegreville, t.	2,908	3,598*
Vermilion, t.	2,449	2,685
Viking, t.	1,043	1,146*
Vulcan, t.	1,310	1,505
Wainwright, t.	3,351	3,867*
Westlock, t.	1,838	2,685*
Wetaskiwin, c.	5,300	6,008*
Whitecourt, t.	1,054	2,279*
British Columbia—		
Alberni, c.	4,616	4,783
Armstrong, c.	1,288	1,426
Ashcroft, v.	868	1,154*
Burns Lake, v.	1,041	1,290
Castlegar, t.	2,253	3,440*
Chetwynd, v.	[1]	1,368
Chilliwack, c.	8,259	8,681
Comox, v.	1,756	2,671
Courtenay, c.	3,485	4,913
Cranbrook, c.	5,549	7,849*
Creston, t.	2,460	2,920*
Cumberland, v.	1,303	1,277
Dawson Creek, c.	10,946	12,392*
Duncan, c.	3,726	4,299
Enderby, c.	1,075	1,114
Fernie, c.	2,661	2,715*
Fort St. James, v.	1,081	1,213
Fort St. John, t.	3,619	6,749*
Fruitvale, v.	1,032	1,203
Gibson's Landing, v.	1,091	1,450
Golden, v.	1,776	2,590
Grand Forks, c.	2,347	2,556*
Hope, t.	2,751	2,948
Invermere, v.	744	1,022*

[1] Incorporated after June 1, 1961.

[2] See Saskatchewan.

7.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over, by Province, Census Years 1961 and 1966—concluded

Province and Incorporated Centre	Population		Province or Territory and Incorporated Centre	Population	
	1961 Census	1966 Census		1961 Census	1966 Census
	No.	No.		No.	No.
British Columbia—continued			**British Columbia**—concluded		
Kamloops, c.	10,076	10,759	Prince Rupert, c.	11,987	14,677*
Kelowna, c.	13,188	17,006*	Princeton, v.	2,163	2,151*
Kimberley, c.	6,013	5,901	Quesnel, t.	4,673	5,725*
Kinnaird, v.	2,123	2,869*	Revelstoke, c.	3,624	4,791*
Ladysmith, t.	2,173	3,410*	Rossland, c.	4,354	4,264
Lake Cowichan, v.	2,149	2,353	Salmon Arm, v.	1,506	1,854
Langley, c.	2,365	2,800	Sidney, v.	1,558	3,165*
Lillooet, v.	1,304	1,379*	Smithers, v.	2,487	3,135*
Marysville, v.	1,057	1,126	Trail, c.	11,580	11,600
Merritt, t.	3,039	4,500	Ucluelet, v.	782	1,054*
Mission City, t.	3,251	3,412	Vancouver, c.	384,522	410,375
Montrose, v.	862	1,079	Vanderhoof, v.	1,460	1,507
Nakusp, v.	[1]	1,282	Vernon, c.	10,250	11,423*
Nanaimo, c.	14,135	15,188	Victoria, c.	54,941	57,453
Nelson, c.	7,074	9,504*	Warfield, v.	2,212	2,255
New Westminster, c.	33,654	38,013*	White Rock, c.	6,453	7,787
North Kamloops, t.	6,456	11,319*	Williams Lake, t.	2,120	3,167
North Vancouver, c.	23,656	26,851			
Oliver, v.	1,774	1,563	**Yukon Territory**—		
Osoyoos, v.	1,022	1,166*	Whitehorse, c.	5,031	4,771
Parksville, v.	1,183	1,426			
Penticton, c.	13,859	15,330*			
Port Alberni, c.	11,560	13,755*	**Northwest Territories**—		
Port Coquitlam, c.	8,111	11,121	Fort Smith, v.	[1]	2,120
Port Moody, c.	4,789	7,021	Hay River, t.	[1]	2,002
Prince George, c.	13,877	24,471*	Yellowknife, t.	[1]	3,741

[1] Incorporated after June 1, 1961.

Subsection 4.—Density of Population

Table 8 shows the density of population in the different provinces and territories of Canada in the census years 1951, 1956, 1961 and 1966. Omitting the Yukon and Northwest Territories where population density is exceedingly low, there were 9.50 persons per square mile in Canada as a whole in 1966 compared with 8.66 in 1961 and 6.65 in 1951. The greatest increase in the latest five years was shown by Ontario where there were 2.11 more persons per square mile, followed by Prince Edward Island where there was an increase of 1.79. However, it should be remembered that the population within the provinces is very unevenly distributed; all provinces with the exception of the Maritimes have large areas almost devoid of population and concentration in other areas is very high. The density of each county and census division, of each city, town and village of 2,500+, and of component parts of metropolitan and other major urban areas in 1966 is given in DBS Census Report 1.1 (Catalogue No. 92-601). Table 9 gives density in the city proper and in the fringe area of each of the five largest metropolitan areas in 1966 compared with 1961 and 1956.

Subsection 5.—Sex and Age Distribution

The sex and age distributions of a population are basic to most, if not all, other analyses, as they influence employment, marriage, birth and death rates and a multitude of other factors that are of great importance in the national life.

Sex.—The Canadian population has always been characterized by an excess of males, although this excess has been greatly modified in recent years. Since Confederation, the peak sex ratio for Canada as a whole was 113 reached in 1911, a census year that fell within

8.—Land Area and Density of Population, by Province, Census Years 1951, 1956, 1961 and 1966

Province or Territory	Land Area	Population 1951		Population 1956		Population 1961		Population 1966	
		Total	Per Sq. Mile	Total	Per Sq. Mile	Total	Per Sq. Mile	Total	Per Sq. Mile
	sq. miles	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland (incl. Labrador)	143,045	361,416	2.53	415,074	2.90	457,853	3.20	493,396	3.45
Prince Edward Island	2,184	98,429	45.07	99,285	45.46	104,629	47.91	108,535	49.70
Nova Scotia	20,402	642,584	31.50	694,717	34.05	737,007	36.12	756,039	37.06
New Brunswick	27,835	515,697	18.53	554,616	19.93	597,936	21.48	616,788	22.16
Quebec	523,860	4,055,681	7.74	4,628,378	8.84	5,259,211	10.04	5,780,845	11.04
Ontario	344,092	4,597,542	13.36	5,404,933	15.71	6,236,092	18.12	6,960,870	20.23
Manitoba	211,775	776,541	3.67	850,040	4.01	921,686	4.35	963,066	4.55
Saskatchewan	220,182	831,728	3.78	880,665	4.00	925,181	4.20	955,344	4.34
Alberta	248,800	939,501	3.78	1,123,116	4.51	1,331,944	5.35	1,463,203	5.88
British Columbia	359,279	1,165,210	3.24	1,398,464	3.89	1,629,082	4.53	1,873,674	5.22
Canada (Exclusive of the Territories)	**2,101,454**	**13,984,329**	**6.65**	**16,049,288**	**7.64**	**18,200,621**	**8.66**	**19,971,760**	**9.50**
Yukon Territory	205,346	9,096	0.04	12,190	0.06	14,628	0.07	14,382	0.07
Northwest Territories	1,253,438	16,004	0.01	19,313	0.02	22,998	0.02	28,738	0.02
Canada	**3,560,238**	**14,009,429**	**3.93**	**16,080,791**	**4.52**	**18,238,247**	**5.12**	**20,014,880**	**5.62**

9.—Land Area and Density of Population in Canada's Five Largest Metropolitan Areas, Census Years 1956, 1961 and 1966

NOTE.—Revised 1966 land area used for density figures for all years.

Metropolitan Area as of 1966	1956		1961		1966		1966 Land Area
	Population	Density per Sq. Mile	Population	Density per Sq. Mile	Population	Density per Sq. Mile	
	No.	No.	No.	No.	No.	No.	sq. mile
Montreal—							
City proper	1,116,582	19,271	1,201,559	20,738	1,222,255	21,095	57.94
Fringe area	629,487	1,363	909,120	1,968	1,214,562	2,629	461.94
Toronto—							
City proper	667,706	19,099	672,407	19,234	664,584	19,010	34.96
Fringe area	834,637	1,092	1,152,182	1,507	1,493,912	1,954	764.40
Vancouver—							
City proper	365,844	8,443	384,522	8,874	410,375	9,471	43.33
Fringe area	299,173	656	405,643	889	481,911	1,056	456.16
Winnipeg—							
City proper	255,586	8,463	265,986	8,807	257,005	8,510	30.20
Fringe area	157,155	656	210,557	879	251,754	1,051	239.43
Ottawa—							
City proper	222,129	5,223	268,206	6,306	290,741	6,836	42.53
Fringe area	123,340	431	161,555	565	203,794	712	286.06

a period of heavy immigration; the 1966 ratio was 101. In the older settled provinces east of Manitoba the ratio varied between 104 in 1911 and 100 in 1966, but in the western provinces which were being opened to settlement in the early years of the century the ratio changed from a high of 146 in 1911 to 103 in 1966.

The sex distributions and variations in ratio among the provinces are given for the census years 1951, 1956, 1961 and 1966 in Table **10**.

10.—Sex Distribution of the Population and Sex Ratio, by Province, Census Years 1951, 1956, 1961 and 1966

Province or Territory	1951			1956		
	Males	Females	Males to 100 Females	Males	Females	Males to 100 Females
	No.	No.	No.	No.	No.	No.
Newfoundland	185,143	176,273	105	213,905	201,169	106
Prince Edward Island	50,218	48,211	104	50,510	48,775	104
Nova Scotia	324,955	317,629	102	353,182	341,535	103
New Brunswick	259,211	256,486	101	279,590	275,026	102
Quebec	2,022,127	2,033,554	99	2,317,677	2,310,701	100
Ontario	2,314,170	2,283,372	101	2,721,519	2,683,414	101
Manitoba	394,818	381,723	103	432,478	417,562	104
Saskatchewan	434,568	397,160	109	458,428	422,237	109
Alberta	492,192	447,309	110	585,921	537,195	109
British Columbia	596,961	568,249	105	720,516	677,948	106
Yukon Territory	5,457	3,639	150	6,924	5,266	131
Northwest Territories	9,053	6,951	130	11,229	8,084	139
Canada	**7,088,873**	**6,920,556**	**102**	**8,151,879**	**7,928,912**	**103**

Province or Territory	1961			1966		
	Males	Females	Males to 100 Females	Males	Females	Males to 100 Females
	No.	No.	No.	No.	No.	No.
Newfoundland	234,924	222,929	105	252,125	241,271	104
Prince Edward Island	53,357	51,272	104	54,974	53,561	103
Nova Scotia	374,244	362,763	103	380,517	375,522	101
New Brunswick	302,440	295,496	102	310,145	306,643	101
Quebec	2,631,856	2,627,355	100	2,885,927	2,894,918	100
Ontario	3,134,528	3,101,564	101	3,479,149	3,481,721	100
Manitoba	468,503	453,183	103	484,266	478,800	101
Saskatchewan	479,564	445,617	108	489,040	466,304	105
Alberta	689,383	642,561	107	746,245	716,958	104
British Columbia	829,094	799,988	104	948,585	925,089	103
Yukon Territory	8,178	6,450	127	7,805	6,577	119
Northwest Territories	12,822	10,176	126	15,566	13,172	118
Canada	**9,218,893**	**9,019,351**	**102**	**10,054,344**	**9,960,536**	**101**

Age.—The age composition of the Canadian population is, of course, a reflection of past trends in vital rates and immigration. The lower birth rate of the 1961-66 period relative to that of the late 1950s had a considerable impact on the population under 15 years of age in 1966. This age group increased by only 400,000 or 6.5 p.c. between 1961 and 1966 as compared with a gain of 967,000 or 18.5 p.c. in the 1956-61 period. As a result, the proportion that this age group formed of the total population fell from 34.0 p.c. in 1961 to 32.9 p.c. in 1966. The population of working age—those 15-64—increased more substantially, with a gain in excess of 1,200,000 or 11.5 p.c. in the 1961-66 period. Consequently, this age group constituted 59.4 p.c. of the total population in 1966 as compared with 58.4 p.c. five years earlier. Close to one third of the over-all 1961-66 increase in the 15-64 age group occurred among those 15-19 years of age. This young adult age group in 1966 was, of course, comprised of those born in the high birth rate, postwar years. The proportion of persons 65 years of age or over was approximately the same in 1966 as in 1961.

Table 11 shows the population of Canada classified by five-year age groups and by sex for the census years 1951, 1956, 1961 and 1966. The provincial distribution by specified age group is given for 1966 in Table 12.

11.—Male and Female Populations, by Age Group, Census Years 1951, 1956, 1961 and 1966

Age Group	1951		1956		1961		1966	
	Male	Female	Male	Female	Male	Female	Male	Female
	No.	No.	No.	No.	No.	No.	No.	No.
0- 4 years	879,063	843,046	1,011,835	971,728	1,154,091	1,102,310	1,128,771	1,068,616
5- 9 "	713,873	683,952	919,952	887,101	1,063,840	1,015,682	1,172,821	1,128,036
10-14 "	575,122	555,661	732,032	702,562	948,160	907,839	1,071,255	1,022,258
15-19 "	532,180	525,792	586,635	575,666	729,035	703,524	928,958	908,767
20-24 "	537,535	551,106	567,179	561,931	587,139	596,507	727,115	734,183
25-29 "	552,812	578,403	605,836	592,301	613,897	595,400	619,462	622,332
30-34 "	512,557	530,177	602,535	613,750	644,407	627,403	630,498	611,199
35-39 "	503,571	495,562	555,763	558,622	631,072	639,852	649,769	636,375
40-44 "	445,800	422,767	522,615	502,784	559,996	558,965	624,709	632,319
45-49 "	387,708	356,971	455,827	422,988	515,516	499,800	542,752	547,163
50-54 "	340,461	322,195	381,835	351,215	442,909	420,279	498,283	489,981
55-59 "	292,564	278,126	321,973	307,271	362,145	343,690	413,389	402,911
60-64 "	264,324	241,828	265,652	259,265	292,569	291,066	330,006	333,404
65-69 "	228,076	205,421	237,551	226,562	239,685	247,417	254,938	276,771
70-74 "	160,398	154,674	187,490	183,218	196,076	206,099	198,808	228,399
75-79 "	94,130	94,261	113,550	113,948	134,186	140,051	138,967	161,398
80-84 "	45,963	50,828	55,636	61,460	69,046	77,771	80,664	96,655
85-89 "	17,539	22,060	21,688	26,670	27,178	33,606	33,073	43,717
90 years or over	5,197	7,726	6,295	9,870	7,946	12,093	10,106	16,052
Totals	**7,088,873**	**6,920,556**	**8,151,879**	**7,928,912**	**9,218,893**	**9,019,354**	**10,054,344**	**9,960,536**

12.—Age Distribution of the Population, by Province, Census 1966

Province or Territory	0-4 Years	5-9 Years	10-14 Years	15-19 Years	20-24 Years	25-34 Years
	No.	No.	No.	No.	No.	No.
Newfoundland	68,545	67,007	63,531	54,307	35,976	53,299
Prince Edward Island	12,587	13,023	12,023	11,061	6,781	11,256
Nova Scotia	85,521	87,433	81,600	74,142	52,598	84,372
New Brunswick	72,859	76,295	72,908	65,567	42,331	65,198
Quebec	632,489	682,874	628,210	566,315	474,158	752,995
Ontario	745,744	770,061	688,270	599,197	485,053	881,011
Manitoba	102,425	105,527	99,227	87,848	66,899	109,460
Saskatchewan	107,515	110,130	103,304	88,412	62,150	104,651
Alberta	173,568	179,540	157,658	128,999	102,005	186,681
British Columbia	188,778	203,068	182,424	158,406	129,761	227,754
Yukon Territory	2,124	1,848	1,437	1,017	1,116	2,339
Northwest Territories	5,232	4,051	2,921	2,454	2,470	4,475
Canada	**2,197,387**	**2,300,857**	**2,093,513**	**1,837,725**	**1,461,298**	**2,483,491**

Province or Territory	35-44 Years	45-54 Years	55-64 Years	65-69 Years	70+ Years	Total
	No.	No.	No.	No.	No.	No.
Newfoundland	49,027	43,867	28,665	10,261	18,911	493,396
Prince Edward Island	10,912	10,846	8,357	3,595	8,094	108,535
Nova Scotia	84,118	81,138	57,838	21,642	45,637	756,039
New Brunswick	66,697	60,595	44,020	16,623	33,695	616,788
Quebec	730,872	565,813	395,465	133,813	217,841	5,780,845
Ontario	941,974	744,385	537,453	199,206	368,516	6,960,870
Manitoba	117,065	106,752	79,005	28,668	60,190	963,066
Saskatchewan	110,413	103,270	76,617	27,264	61,618	955,344
Alberta	184,532	145,224	100,986	35,195	68,815	1,463,203
British Columbia	242,415	213,059	149,343	54,902	123,764	1,873,674
Yukon Territory	2,016	1,240	732	216	297	14,382
Northwest Territories	3,131	1,990	1,229	324	461	28,738
Canada	**2,543,172**	**2,078,179**	**1,479,710**	**531,709**	**1,007,839**	**20,014,880**

Subsection 6.—Marital Status

After sex and age, marital status analysis is probably next in importance from a vital, economic and social viewpoint. The number of married females between 15 and 45 years of age is a most significant factor in the fertility of a population. If the proportion of females in this group is low, the expected birth rate will be low. In 1966, 61.2 p.c. of all married females were in the 15-44 age group compared with 62.9 p.c. in 1961, 64.0 p.c. in 1951, 61.2 p.c. in 1941 and 63.5 p.c. in 1931.

In the 1961-66 period, the total population 15 years of age or over increased by 11.4 p.c. while the single adult population rose by 18.0 p.c., the married by 8.7 p.c. and the widowed and divorced combined by 12.5 p.c. Thus, the proportion of the adult population who were single increased from 26.5 p.c. in 1961 to 28.0 p.c. in 1966 and the married proportion fell from 66.6 p.c. to 65.0 p.c. in the five-year interval. It is of interest that the 1961-66 decline in the proportion married is attributable largely to smaller proportions in this category in the younger adult age groups. The proportion of those 25 years of age or over who were married was approximately the same at the two census years, i.e., 79 p.c., but the married proportion for the 15-24 age group fell from 23.0 p.c. in 1961 to 21.4 p.c. in 1966.

The marital status of the population in 1966 is shown in Table **13.**

13.—Marital Status of the Population, by Age Group and Sex, Census 1966

Age Group and Sex		Single	Married	Widowed	Divorced	Total
		No.	No.	No.	No.	No.
Under 15 years	M.	3,372,847	—	—	—	3,372,847
	F.	3,218,910	—	—	—	3,218,910
	T.	6,591,757	—	—	—	6,591,757
15–19 "	M.	917,589	11,188	160	21	928,958
	F.	839,812	68,692	167	96	908,767
	T.	1,757,401	79,880	327	117	1,837,725
20–24 "	M.	508,672	217,779	291	373	727,115
	F.	324,762	406,922	1,031	1,468	734,183
	T.	833,434	624,701	1,322	1,841	1,461,298
25–34 "	M.	265,222	979,302	1,604	3,832	1,249,960
	F.	149,678	1,068,296	7,368	8,189	1,233,531
	T.	414,900	2,047,598	8,972	12,021	2,483,491
35–44 "	M.	146,523	1,114,948	6,408	6,599	1,274,478
	F.	98,428	1,127,718	31,364	11,184	1,268,694
	T.	244,951	2,242,666	37,772	17,783	2,543,172
45–54 "	M.	104,744	914,181	15,523	6,587	1,041,035
	F.	89,947	858,387	78,451	10,359	1,037,144
	T.	194,691	1,772,568	93,974	16,946	2,078,179
55–64 "	M.	78,678	627,089	32,782	4,846	743,395
	F.	76,473	511,869	142,234	5,739	736,315
	T.	155,151	1,138,958	175,016	10,585	1,479,710
65–69 "	M.	28,832	199,031	25,593	1,482	254,938
	F.	28,110	149,170	98,172	1,319	276,771
	T.	56,942	348,201	123,765	2,801	531,709
70 years or over	M.	50,657	296,036	113,286	1,639	461,618
	F.	56,706	172,609	315,863	1,043	546,221
	T.	107,363	468,645	429,149	2,682	1,007,839
All Ages	**M.**	**5,473,764**	**4,359,554**	**195,647**	**25,379**	**10,054,344**
	F.	**4,882,826**	**4,363,663**	**674,650**	**39,397**	**9,960,536**
	T.	**10,356,590**	**8,723,217**	**870,297**	**64,776**	**20,014,880**

Subsection 7.—Ethnic Groups and Birthplaces

Ethnic Groups.—A population made up of diverse ethnic groups gives rise to political, social and economic problems quite different in nature from those of one with a more homogeneous ethnic composition. These problems are mitigated, however, to the extent that certain groups are more easily integrated than others. It is equally true that the different backgrounds of various ethnic groups lend variety and diversity to the national life.

The two basic groups in the Canadian population are the French and British Isles ethnic groups. The influence of the French in Canada covers a longer period and, with the exception of the 1921 Census, this group has always exceeded in number any of the components of the British Isles ethnic group.

In 1961, each person was asked the question: "To what ethnic or cultural group did you or your ancestor (on the male side) belong on coming to this Continent?". The language spoken at the time by the person, or his paternal ancestor, was used as an aid in determining the person's ethnic group. The classification is given for 1961 in Table 14 with comparative figures for 1951 and 1941. Information on ethnic group was not collected in the 1956 or 1966 Censuses.

14.—Distribution of the Population by Ethnic Group, Census Years 1941, 1951 and 1961

Ethnic Group	1941[1]	1951	1961	
	No.	No.	No.	p.c.
British Isles	**5,715,904**	**6,709,685**	**7,996,669**	**43.8**
English	2,968,402	3,630,344	4,195,175	23.0
Irish	1,267,702	1,439,635	1,753,351	9.6
Scottish	1,403,974	1,547,470	1,902,302	10.4
Other	75,826	92,236	145,841	0.8
Other European	**5,526,964**	**6,872,889**	**9,657,195**	**53.0**
Austrian	37,715	32,231	106,535	0.6
Belgian	29,711	35,148	61,382	0.3
Czech and Slovak	42,912	63,959	73,061	0.4
Danish	37,439	42,671	85,473	0.5
Finnish	41,683	43,745	59,436	0.3
French	3,483,038	4,319,167	5,540,346	30.4
German	464,682	619,995	1,049,599	5.8
Greek	11,692	13,966	56,475	0.3
Hungarian	54,598	60,460	126,220	0.7
Icelandic	21,050	23,307	30,623	0.2
Italian	112,625	152,245	450,351	2.5
Jewish	170,241	181,670	173,344	1.0
Lithuanian	7,789	16,224	27,629	0.2
Netherlands	212,863	264,267	429,679	2.4
Norwegian	100,718	119,266	148,681	0.8
Polish	167,485	219,845	323,517	1.8
Romanian	24,689	23,601	43,805	0.2
Russian	83,708	91,279	119,168	0.7
Swedish	85,396	97,780	121,757	0.7
Ukrainian	305,929	395,043	473,337	2.6
Yugoslavic	21,214	21,404	68,587	0.4
Other	9,787	35,616	88,190	0.5
Asiatic	**74,061**	**72,827**	**121,753**	**0.7**
Chinese	34,627	32,528	58,197	0.3
Japanese	23,149	21,663	29,157	0.2
Other	16,288	18,636	34,399	0.2
Other Origin	**189,723**	**354,028**	**462,630**	**2.5**
Native Indian and Eskimo	125,521	165,607	220,121	1.2
Negro	22,174	18,020	32,127	0.2
Other and not stated	42,028[2]	170,401	210,382	1.2

[1] Excludes Newfoundland. [2] Includes 35,416 half-breeds.

Birthplaces.—Table **15** gives the total population of Canada classified by country of birth for the census years 1941, 1951 and 1961, and Table **16** shows the province of birth of Canadian-born persons for the same years. For immigrants, the country of birth was recorded according to boundaries existing at the date of the census. Information on birthplaces was not collected in the 1956 or 1966 Censuses.

15.—Country of Birth of the Population, Census Years 1941, 1951 and 1961

Country	1941[1]	1951	1961	
	No.	No.	No.	p.c.
Canada	9,487,808	11,949,518	15,393,984	84.4
British Isles	960,125[2]	912,482	969,715	5.3
Other Commonwealth	43,644	20,567	47,887	0.3
Europe	653,705	801,618	1,468,058	8.0
Austria	50,713	37,598	70,192	0.4
Czechoslovakia	25,564	29,546	35,743	0.2
France	13,795	15,650	36,103	0.2
Germany	28,479	42,693	189,131	1.0
Greece	5,871	8,594	38,017	0.2
Hungary	31,813	32,929	72,900	0.4
Italy	40,432	57,789	258,071	1.4
Netherlands	9,923	41,457	135,033	0.7
Poland	155,400	164,474	171,467	0.9
Scandinavian countries[3]	72,473	64,522	74,616	0.4
Union of Soviet Socialist Republics	124,402	188,292	186,653	1.0
Yugoslavia	17,416	20,912	50,826	0.3
Other European	77,424	97,162	149,306	0.8
Asia	44,443	37,145	57,761	0.3
China	29,095	24,166	36,724	0.2
Other Asian	15,348	12,979	21,037	0.1
United States	312,473	282,010	283,908	1.6
Other countries	3,512	6,089	16,934	0.1
Totals	**11,596,655[4]**	**14,009,429**	**18,238,247**	**100.0**

[1] Excludes Newfoundland. [2] Includes the Republic of Ireland. [3] Includes Denmark, Iceland, Norway and Sweden. [4] Includes persons whose birthplace was not stated.

16.—Province of Birth of Canadian-Born Persons, Census Years 1941, 1951 and 1961

Province	1941	1951	1961	Province or Territory	1941	1951	1961
	No.	No.	No.		No.	No.	No.
Nfld.	..	397,623	497,591	Sask.	667,832	817,404	1,030,755
P.E.I.	108,423	117,310	130,123	Alta.	479,098	649,594	965,425
N.S.	568,797	660,150	783,848	B.C.	335,554	514,651	843,596
N.B.	463,127	549,984	655,066	Y.T. and N.W.T.	12,267	16,654	26,028
Que.	3,155,549	3,881,487	4,916,024				
Ont.	3,123,810	3,645,074	4,667,159				
Man.	570,349	699,587	878,369	**Canada**	**9,487,808[1]**	**11,949,518**	**15,393,984**

[1] Includes persons born in Canada whose province of birth was not stated.

Subsection 8.—Religious Denominations

In the 1961 Census, enumerators were instructed to record the specific religious body, denomination, sect or community reported in answer to the question: "What is your religion?". Thus, it should be noted that census figures do not measure church membership or indicate the degree of affiliation with any religious body. As shown in Table **17**, close to eight out of ten persons in Canada stated that they belonged to one of the three numerically largest denominations—Roman Catholic, United Church and Anglican—in 1961. The table gives comparative figures for the census years 1941 and 1951; this information was not collected in the 1956 or 1966 Censuses.

17.—Principal Religious Denominations of the Population, Census Years 1941, 1951 and 1961

Religious Denomination	1941	1951	1961	
	No.	No.	No.	p.c.
Adventist	18,485	21,398	25,999	0.1
Anglican Church of Canada	1,754,368	2,060,720	2,409,068	13.2
Baptist	484,465	519,585	593,553	3.3
Greek Orthodox	139,845	172,271	239,766	1.3
Jehovah's Witnesses	7,007	34,596	68,018	0.4
Jewish	168,585	204,836	254,368	1.4
Lutheran	401,836	444,923	662,744	3.6
Mennonite[1]	111,554	125,938	152,452	0.8
Mormon	25,328	32,888	50,016	0.3
Pentecostal	57,742	95,131	143,877	0.8
Presbyterian	830,597	781,747	818,558	4.5
Roman Catholic	4,806,431	6,069,496	8,342,826	45.7
Salvation Army	33,609	70,275	92,054	0.5
Ukrainian (Greek) Catholic[2]	185,948	191,051	189,653	1.0
United Church of Canada	2,208,658	2,867,271	3,664,008	20.1
Other	272,197	317,303	531,287	2.9
Totals	**11,506,655[3]**	**14,009,429**	**18,238,247**	**100.0**

[1] Includes "Hutterites". [2] Includes "Other Greek Catholic". [3] Exclusive of Newfoundland.

Subsection 9.—Languages and Mother Tongues

The term "official language" used by the 1961 Census refers only to the English and French languages.* "Mother tongue" is the language a person first learned in childhood and still understands. It should be noted that persons indicated as speaking "English only" or "French only" with respect to official language may also speak other languages and have a mother tongue other than English or French. The use of the English and French languages in Canada at the time of the 1961 Census is discussed in a special article appearing in the 1965 Year Book at pp. 180-184. Table **18** gives the numerical and percentage distribution of official language by province in 1961; this information was not collected in the 1966 Census.

* The British North America Act, 1867 (Sect. 133) makes provision for the use of the English and French languages as follows:—

Either the English or the French Language may be used by any Person in the Debates of the Houses of the Parliament of Canada and of the Houses of the Legislature of Quebec; and both those Languages shall be used in the respective Records and Journals of those Houses; and either of those Languages may be used by any Person or in any Pleading or Process in or issuing from any Court of Canada established under this Act, and in or from all or any of the Courts of Quebec.

The Acts of the Parliament of Canada and of the Legislature of Quebec shall be printed and published in both those Languages.

The use of the English and French languages in the administration of the Government of Canada as set out in the Official Languages Act, 1969, is described briefly at p. 67.

18.—Numerical and Percentage Distribution of the Population Speaking One, Both or Neither of the "Official Languages", by Province, Census 1961

Province or Territory	English Only		French Only		English and French		Neither English nor French	
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
Newfoundland	450,945	98.5	522	0.1	5,299	1.2	1,087	0.2
Prince Edward Island	95,296	91.1	1,219	1.2	7,938	7.6	176	0.2
Nova Scotia	684,805	92.9	5,938	0.8	44,987	6.1	1,277	0.2
New Brunswick	370,922	62.0	112,054	18.7	113,495	19.0	1,465	0.2
Quebec	608,635	11.6	3,254,850	61.9	1,338,878	25.5	56,848	1.1
Ontario	5,548,766	89.0	95,236	1.5	493,270	7.9	98,820	1.6
Manitoba	825,955	89.6	7,954	0.9	68,368	7.4	19,409	2.1
Saskatchewan	865,821	93.6	3,853	0.4	42,074	4.5	13,433	1.5
Alberta	1,253,824	94.1	5,534	0.4	56,920	4.3	15,666	1.2
British Columbia	1,552,560	95.3	2,559	0.2	57,504	3.5	16,459	1.0
Yukon Territory	13,679	93.5	38	0.3	825	5.6	86	0.6
Northwest Territories	13,554	58.9	109	0.5	1,614	7.0	7,721	33.6
Canada	**12,284,762**	**67.4**	**3,489,866**	**19.1**	**2,231,172**	**12.2**	**232,447**	**1.3**

Mother tongues of the population are shown in Table **19.** The proportion reporting English as their mother tongue in 1961 was 58.5 p.c. (compared with 59.1 p.c. in 1951), French 28.1 p.c. (29.0 p.c. in 1951) and all other mother tongues 13.5 p.c. (11.8 p.c. in 1951).

19.—Mother Tongues of the Population, Census 1961

Mother Tongue	Number	Percentage of Total	Mother Tongue	Number	Percentage of Total
English	10,660,534	58.45	Danish	35,035	0.19
French	5,123,151	28.09	Swedish	32,632	0.18
German	563,713	3.09	Serbo-Croatian	28,866	0.16
Ukrainian	361,496	1.98	Japanese	17,856	0.10
Italian	339,626	1.86	Lithuanian	14,997	0.08
Netherlands	170,177	0.93	Flemish	14,304	0.08
Indian and Eskimo	166,531	0.91	Lettish	14,062	0.08
Polish	161,720	0.89	Estonian	13,830	0.08
Magyar	85,939	0.47	Syrian and Arabic	12,999	0.07
Yiddish	82,448	0.45	Romanian	10,165	0.06
Chinese	49,099	0.27	Icelandic	8,993	0.05
Finnish	44,785	0.25	Gaelic	7,533	0.04
Russian	42,903	0.24	Welsh	3,040	0.02
Slovak	42,546	0.23	Other	48,758	0.27
Greek	40,455	0.22			
Norwegian	40,054	0.22	**Canada**	**18,238,247**	**100.00**

Subsection 10.—Households and Families

This Subsection contains limited statistics on households and families recorded at the 1966 Census; more detailed information may be found in 1966 Census reports relating to households and families (see also p. 207).

A household, as defined in the census, consists of a person or a group of persons occupying one dwelling.* It usually consists of a family with or without lodgers, employees, etc. However, it may consist of a group of unrelated persons, of two or more families sharing a dwelling, or of one person living alone. Every person is a member of some household and the number of households equals the number of occupied dwellings.

The total number and the average size of households are given by province for the census years 1956, 1961 and 1966 in Table **20.**

* A dwelling is defined as a structurally separate set of living quarters, with a private entrance either from outside the building or from a common hall, lobby, vestibule or stairway inside. The entrance must not be through another person's living quarters.

20.—Households and Persons per Household, by Province, Census Years 1956, 1961 and 1966

Province or Territory	Households			Average Persons per Household		
	1956	1961	1966	1956	1961	1966
	No.	No.	No.	No.	No.	No.
Newfoundland	78,808	87,940	96,632	5.1	5.0	5.0
Prince Edward Island	22,682	23,942	25,360	4.2	4.2	4.2
Nova Scotia	162,854	175,341	185,245	4.1	4.0	4.0
New Brunswick	120,475	132,715	141,761	4.5	4.4	4.2
Quebec	1,001,264	1,191,469	1,389,115	4.4	4.2	4.0
Ontario	1,392,491	1,640,881	1,876,545	3.8	3.7	3.6
Manitoba	217,964	239,754	259,280	3.7	3.7	3.6
Saskatchewan	233,664	245,424	260,822	3.6	3.6	3.6
Alberta	294,047	349,816	393,707	3.7	3.7	3.6
British Columbia	392,403	459,534	543,075	3.4	3.4	3.3
Yukon and Northwest Territories	6,994	7,920	8,931	3.8	4.2	4.3
Canada	**3,923,646**	**4,554,736**	**5,180,473**	**3.9**	**3.9**	**3.7**

The average size of the Canadian family* remained the same at 3.9 persons between 1961 and 1966. By province, however, there were some changes, with the average rising in provinces from Ontario west to Alberta and dropping in Newfoundland.

21.—Families and Persons per Family, by Province, Census Years 1956, 1961 and 1966

Province or Territory	Families			Average Persons per Family		
	1956	1961	1966	1956	1961	1966
	No.	No.	No.	No.	No.	No.
Newfoundland	82,128	89,267	97,011	4.6	4.7	4.6
Prince Edward Island	21,153	21,969	22,728	4.1	4.2	4.2
Nova Scotia	154,243	161,894	166,237	3.9	4.0	4.0
New Brunswick	116,623	124,653	129,307	4.2	4.3	4.3
Quebec	970,414	1,103,822	1,229,301	4.2	4.2	4.2
Ontario	1,342,572	1,511,478	1,657,933	3.5	3.6	3.7
Manitoba	204,414	215,831	222,735	3.6	3.7	3.8
Saskatchewan	205,135	211,776	216,674	3.8	3.8	3.9
Alberta	262,922	305,671	331,158	3.7	3.8	3.9
British Columbia	346,003	394,023	445,297	3.4	3.6	3.6
Yukon and Northwest Territories	5,893	7,060	7,885	4.1	4.3	4.5
Canada	**3,711,500**	**4,147,444**	**4,526,266**	**3.8**	**3.9**	**3.9**

Closely related to the number of families per household, and also an indicator of living conditions, is the type of family. In 1966, 96.0 out of every 100 families in Canada were maintaining their own households as compared with 94.3 in 1961 and 92.3 in 1956, an apparent steady improvement in living conditions. The families not maintaining their own households fell into two main sub-categories—families related to the head of the household and non-related lodging families. The few who did not fit either of these sub-categories were mostly families of employees living in their employer's household.

There were 8,656,245 children in families in 1966. These are limited by definition to children never married and under 25 years of age who were living with their parents or guardians at the time of the census. In Table 22, the number of children is classified to show the number in each of four separate age groups corresponding roughly to pre-school-age children, those of elementary school age, those at the secondary school level, and those of college or working age.

* A family, as defined in the census, consists of a husband and wife (with or without children who have never married) or a parent with one or more children never married, living together in the same dwelling. Adopted children and stepchildren are counted as own children and, in fact, a family may comprise a man or woman living with a guardianship child or ward under 21 years of age.

22.—Children Living at Home classified by Age Group and by Province, Census 1966

Province or Territory	Under 6 Years	6–14 Years	15–18 Years	19–24 Years	Total Children Living at Home
	No.	No.	No.	No.	No.
Newfoundland	81,175	115,328	39,942	19,647	256,092
Prince Edward Island	15,141	22,101	8,359	4,270	49,871
Nova Scotia	101,646	149,024	53,828	28,521	333,019
New Brunswick	86,587	131,907	48,425	25,061	291,980
Quebec	753,573	1,150,157	425,237	317,939	2,646,906
Ontario	894,669	1,282,401	438,098	255,591	2,870,759
Manitoba	122,091	180,586	64,218	35,428	402,323
Saskatchewan	127,602	188,243	64,613	27,757	408,215
Alberta	206,732	295,528	92,551	43,078	637,889
British Columbia	224,892	338,946	115,014	60,309	739,161
Yukon and Northwest Territories	8,369	8,376	2,184	1,101	20,030
Canada	**2,622,477**	**3,862,597**	**1,352,469**	**818,702**	**8,656,245**

Section 2.—Current Population Estimates

Intercensal estimates of the population of Canada and of the provinces have many uses. They are necessary to the calculation of costs of certain economic and social legislation. Business, educational and welfare organizations utilize population estimates in planning future development. They constitute a base for vital statistics rates, per capita figures of production and trade, and other analyses. They also have been found useful for estimating labour force and other population characteristics of data collected in sample surveys.

Estimates are constructed for the total population of Canada and for each province and become available about the date to which they apply—June 1 of each year. Population estimates by province are also available on a quarter-year basis. The estimates of population begin with the preceding census counts, to which are added the births of the intervening census year or years and from which the deaths are subtracted; immigrants are added and emigrants subtracted. No complete information is available on emigration. The DBS receives yearly from the United States the number of persons who gave Canada as country of last permanent residence before entering the United States as immigrants (see Chapter IV on Immigration and Citizenship, Part I, Section 3) and from the Registrar-General of Britain the number of emigrants from Canada arriving by sea and air to take up permanent residence in that country. Such data, however, are not available from other countries but, as indicated by partial data from United Nations sources, the proportion of total emigrants to all other countries is small. Family allowances statistics showing the number of migrant families by province are used in estimating interprovincial shifts in population (see Table **3**, p. 213).

The following statement shows the data used in preparing the population estimates for the years 1957 to 1969. The next succeeding census serves as a basis for revision of the annual estimates of each intercensal period.

Year	*Population at June 1*	*From June 1 to May 31 of Next Year*			
		Births[1]	*Deaths*[1]	*Immigrants*	*Residual*[2]
	No.	No.	No.	No.	No.
1956 Census	16,081,000	461,000	132,000	255,000	55,000
1957	16,610,000	471,000	138,000	194,000	57,000
1958	17,080,000	474,000	139,000	116,000	48,000
1959	17,483,000	477,000	138,000	106,000	58,000
1960	17,870,000	479,000	141,000	89,000	59,000
1961 Census	18,238,000	472,000	143,000	70,000	54,000
1962	18,583,000	471,000	146,000	79,000	56,000
1963	18,931,000	459,000	144,000	102,000	58,000
1964	19,290,000	442,000	148,000	121,000	61,000
1965	19,644,000	404,000	150,000	166,000	49,000
1966 Census	20,015,000	380,000	148,000	214,000	56,000
1967	20,405,000	371,000	156,000	204,000	80,000
1968	20,744,000	362,000	152,000	172,000	65,000
1969	21,061,000	..	..	..	..

[1] Final figures used where available and registrations substituted for the remaining period.
[2] Mainly emigration.

23.—Annual Estimates of Population, by Province, as at June 1, 1956-69

NOTE.—At every census the previous post-censal estimates, made at June 1 each year, are adjusted to the newly recorded population figures. Figures for 1956, 1961 and 1966 are census figures. Figures for 1867–1904 will be found in the 1936 Year Book, p. 141; for 1905–30 in the 1946 edition, p. 127; for 1931–40 in the 1952–53 edition, p. 143; and for 1941–55 in the 1961 edition, p. 165. Figures for 1867–1951 will also be found in *Census of Canada 1951*, Vol. X.

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000
1956	**415**	**99**	**695**	**555**	**4,628**	**5,405**	**850**	**881**	**1,123**	**1,399**	**12**	**19**	**16,081**
1957	424	99	701	562	4,769	5,636	862	880	1,164	1,482	12	19	16,610
1958	432	100	709	571	4,904	5,821	875	891	1,206	1,538	13	20	17,080
1959	441	101	719	582	5,024	5,969	891	907	1,248	1,567	13	21	17,483
1960	448	103	727	589	5,142	6,111	906	915	1,291	1,602	14	22	17,870
1961	**458**	**105**	**737**	**598**	**5,259**	**6,236**	**922**	**925**	**1,332**	**1,629**	**14**	**23**	**18,238**
1962	468	107	746	605	5,371	6,351	936	930	1,369	1,660	15	25	18,583
1963	476	108	751	609	5,481	6,481	949	933	1,403	1,699	15	26	18,931
1964	483	109	755	611	5,584	6,631	959	942	1,429	1,745	15	27	19,290
1965	488	109	756	615	5,685	6,788	965	950	1,450	1,797	14	27	19,644
1966	**493**	**109**	**756**	**617**	**5,781**	**6,961**	**963**	**955**	**1,463**	**1,874**	**14**	**29**	**20,015**
1967	500	109	757	620	5,868	7,149	963	958	1,490	1,947	15	29	20,405
1968	507	110	760	624	5,927	7,306	971	960	1,526	2,007	15	31	20,744
1969	514	110	763	625	5,984	7,452	979	959	1,561	2,067	15	32	21,061

Because of the growing interest in the expanding population of the larger metropolitan areas of Canada, a series of intercensal estimates was begun in 1957. Table 24 shows the estimates for 1968 and 1969 compared with the census counts of June 1, 1961 and 1966. As in preparation of intercensal population estimates for provinces, the births occurring in the metropolitan areas between June 1, 1966 and June 1, 1969 were added to the population at the census date and deaths subtracted. Immigrants over this period reporting these metropolitan areas as places of destination were added and allowances made for losses in population by emigration. Also, the net in-movement or out-movement caused by internal migration was calculated from family allowances and other data.

24.—Estimated Population of Metropolitan Areas[1] as at June 1, 1968 and 1969, compared with 1961 and 1966 Censuses

Metropolitan Area	Census June 1, 1961	Census June 1, 1966	Estimate June 1, 1968	Estimate June 1, 1969	Percentage Increase		
					1961-69	1966-69	1968-69
	'000	'000	'000	'000			
Calgary	279	331	361	375	34.4	13.3	3.7
Edmonton	338	401	425	437	29.3	9.0	3.0
Halifax	184	198	203	204	10.9	3.0	0.3
Hamilton	395	449	471	479	21.3	6.7	1.6
Kitchener	155	192	200	205	32.3	6.8	2.3
London	181	207	220	224	23.8	8.2	1.8
Montreal	2,111	2,437	2,527	2,553	20.9	4.8	1.0
Ottawa	430	495	518	527	22.6	6.5	1.7
Quebec	358	413	424	430	20.1	4.1	1.4
Regina	112	131	137	140	25.0	6.9	2.0
Saint John	96	101	102	101	5.2	—	−0.8
St. John's	92	101	106	110	19.6	8.9	3.1
Saskatoon	96	116	125	129	34.4	11.2	2.6
Sudbury	111	117	120	122	9.9	4.3	2.0
Toronto	1,825	2,158	2,280	2,316	26.9	7.3	1.6
Vancouver	790	892	955	980	24.1	9.9	2.6
Victoria	154	173	182	184	19.5	6.4	1.6
Windsor	193	212	220	223	16.1	5.2	1.4
Winnipeg	477	509	523	534	11.9	4.9	2.2

[1] Areas as of the 1966 Census.

Table **25** gives estimates of the population of Canada and the provinces by age group and sex as of June 1, 1969. The method followed in preparing these estimates was much the same as that used in calculating the population estimates, described on p. 242. These estimates are subject to revision when data from the next census are available.

25.—Estimated Population classified by Age Group and Sex, by Province, as at June 1, 1969

Province or Territory	0–4 Years		5–9 Years		10–14 Years		15–19 Years	
	Males	Females	Males	Females	Males	Females	Males	Females
	'000	'000	'000	'000	'000	'000	'000	'000
Newfoundland	32.8	31.7	34.6	32.7	33.1	32.0	30.4	29.7
Prince Edward Island	5.4	5.3	6.6	6.3	6.4	6.2	5.9	5.8
Nova Scotia	37.2	35.4	44.4	42.1	42.6	40.8	39.9	38.5
New Brunswick	31.6	30.2	38.0	35.9	37.8	36.3	35.5	34.6
Quebec	273.8	258.9	341.3	325.7	339.1	325.6	306.5	296.5
Ontario	347.1	329.2	408.0	389.6	388.1	371.5	340.6	327.0
Manitoba	45.7	43.4	53.3	50.7	51.8	49.7	47.8	46.3
Saskatchewan	46.8	44.4	54.9	52.8	53.7	51.3	49.2	47.1
Alberta	79.7	75.2	95.4	91.2	89.6	85.3	75.7	72.4
British Columbia	90.7	86.2	110.3	105.1	106.5	102.0	93.7	88.7
Yukon Territory	1.0	0.9	1.1	1.0	0.8	0.8	0.6	0.6
Northwest Territories	2.9	2.8	2.4	2.3	1.8	1.8	1.4	1.3
Canada	**994.7**	**943.6**	**1,190.3**	**1,135.4**	**1,151.3**	**1,103.3**	**1,027.2**	**988.5**

Province or Territory	20–24 Years		25–34 Years		35–44 Years		45–54 Years	
	Males	Females	Males	Females	Males	Females	Males	Females
	'000	'000	'000	'000	'000	'000	'000	'000
Newfoundland	23.0	23.1	28.2	27.4	25.0	23.0	23.4	21.1
Prince Edward Island	4.7	4.6	5.7	5.5	5.4	5.1	5.3	5.2
Nova Scotia	32.7	31.8	42.8	42.3	39.7	40.5	39.9	41.0
New Brunswick	28.0	27.2	33.0	32.9	31.0	32.1	30.7	31.2
Quebec	268.7	271.7	404.2	408.3	368.2	373.4	297.9	307.7
Ontario	300.8	298.4	490.7	487.3	487.9	475.3	404.5	409.6
Manitoba	40.3	39.7	57.2	55.7	54.8	55.5	53.4	55.4
Saskatchewan	38.1	36.9	51.6	50.1	52.6	50.8	51.8	51.8
Alberta	60.9	61.9	99.6	99.7	99.2	93.2	79.6	78.5
British Columbia	84.0	81.3	140.0	131.4	134.2	124.1	113.2	117.5
Yukon Territory	0.5	0.5	1.3	1.0	1.2	0.9	0.8	0.7
Northwest Territories	1.4	1.1	2.7	2.1	2.1	1.4	1.2	0.9
Canada	**883.1**	**878.2**	**1,357.0**	**1,343.7**	**1,301.3**	**1,275.3**	**1,101.7**	**1,120.6**

Province or Territory	55–64 Years		65–69 Years		70 + Years		All Ages	
	Males	Females	Males	Females	Males	Females	Males	Females
	'000	'000	'000	'000	'000	'000	'000	'000
Newfoundland	17.0	15.2	5.2	5.3	9.5	10.6	262.2	251.8
Prince Edward Island	4.6	4.3	1.7	1.6	3.8	4.6	55.5	54.5
Nova Scotia	32.4	30.7	10.5	11.3	20.7	25.8	382.8	380.2
New Brunswick	24.0	23.4	8.0	8.8	15.7	19.1	313.3	311.7
Quebec	211.5	222.5	67.6	78.5	103.6	132.8	2,982.4	3,001.6
Ontario	290.8	298.1	99.2	113.2	164.1	231.0	3,721.8	3,730.2
Manitoba	42.7	42.9	14.8	15.5	28.9	33.5	490.7	488.3
Saskatchewan	42.8	40.0	15.0	14.1	32.2	31.0	488.7	470.3
Alberta	57.1	54.2	20.5	18.9	36.8	36.4	794.1	766.9
British Columbia	85.7	84.4	29.2	29.9	59.3	69.6	1,046.8	1,020.2
Yukon Territory	0.5	0.3	0.1	0.1	0.2	0.1	8.1	6.9
Northwest Territories	0.9	0.7	0.2	0.2	0.2	0.2	17.2	14.8
Canada	**810.0**	**816.7**	**272.0**	**297.4**	**475.0**	**594.7**	**10,563.6**	**10,497.4**

Section 3.—The Native Peoples of Canada*

The Indians

The 237,490 persons registered as Indians by the Department of Indian Affairs and Northern Development are persons who are entitled to be so registered in accordance with the provisions of the Indian Act. They are grouped for the most part into 556 bands and occupy or have access to 2,263 reserves and settlements having a combined area of 5,983,072 acres.

26.—Indian Land in Reserves and Settlements and Number of Bands, by Province, as at Mar. 31, 1969

Province or Territory	Bands	Total Reserves and Settlements	Total Area (approx.)
	No.	No.	acres
Prince Edward Island	1	4	2,746
Nova Scotia	12	38	25,552
New Brunswick	15	22	37,579
Quebec	40	39	118,191
Ontario	110	173	1,541,288
Manitoba	51	106	541,550
Saskatchewan	67	126	1,256,886
Alberta	41	98	1,607,478
British Columbia	188	1,603	844,772
Yukon Territory	15	28	4,877
Northwest Territories	16	26	2,153
Totals	**556**	**2,263**	**5,983,072**

27.—Indian Population, by Province, Selected Years 1949-68

NOTE.—Figures for 1949, 1954 and 1959 resulted from a departmental census taken every five years until 1959; those for 1961-68 are taken from data kept for administrative purposes by the Indian Affairs Branch.

Province or Territory	1949	1954	1959	1961	1963	1965	1967	1968
	No.	No.	No.	No.	No.	No.	No.	No.
Prince Edward Island	273	272	341	348	374	393	409	418
Nova Scotia	2,641	3,002	3,561	3,746	3,935	4,099	4,287	4,411
New Brunswick	2,139	2,629	3,183	3,397	3,629	3,824	4,039	4,156
Quebec	15,970	17,574	20,453	21,793	23,043	24,446	25,650	26,302
Ontario	34,571	37,255	42,668	44,942	47,260	49,556	51,731	52,981
Manitoba	17,549	19,684	23,658	25,681	27,778	29,996	32,227	33,358
Saskatchewan	16,308	18,750	23,280	25,334	27,672	30,086	32,579	33,852
Alberta	13,805	15,715	19,287	20,931	22,738	24,587	26,440	27,322
British Columbia	27,936	31,086	36,229	38,616	40,990	43,250	45,152	46,046
Yukon Territory	1,443	1,568	1,868	2,006	2,142	2,292	2,477	2,562
Northwest Territories	3,772	4,023	4,598	4,915	5,235	5,569	5,911	6,082
Totals	**136,407**	**151,558**	**179,126**	**191,709**	**204,796**	**218,098**	**230,902**	**237,490**

Administration.—Pursuant to the British North America Act, the administration of Indian affairs, which had been under the management of several provinces, came under the jurisdiction of the Government of Canada in 1867. From January 1950 to December 1965, Indian affairs were the responsibility of a Branch of the Department of Citizenship and Immigration. By legislation (SC 1966, c. 25) a new department was formed whereby the Indian Affairs Branch joined with part of the Department of Northern Affairs and National Resources to become the Department of Indian Affairs and Northern Development. This Department is composed of a headquarters staff at Ottawa, seven regional offices, and a varying number of district offices and field agencies. Attached to the head-

* Revised by the Department of Indian Affairs and Northern Development, Ottawa.

quarters and regional and district offices are specialists in such matters as education, economic and resource development, community affairs, social assistance, and engineering and construction.

Education.—The key to continued progress in Indian education is the active participation of the Indians themselves through their school committees and membership on school boards, strengthened by ever-increasing support from non-federal governments and from professional groups concerned specifically with classroom instruction of Indian pupils. The Education Branch of the Department of Indian Affairs and Northern Development maintains and operates a number of schools for Indians but in 1968-69, 33,351 of the 62,834 Indian elementary and secondary school pupils attended non-federal schools, a system arranged for the most part through agreements between the Branch and individual school boards. In Manitoba, British Columbia and New Brunswick, however, under agreement with the respective provincial governments, a uniform tuition fee is paid by the Branch for Indian pupils attending schools under the jurisdiction of the province. Federal financial assistance for pupils attending non-federal schools varies from payment of tuition fees to full maintenance. Promising senior students are awarded scholarships to attend university or vocational school and scholarships are given to those who show promise in the arts.

Federal schools for Indian children are in operation in all provinces except Newfoundland and school residences care for children who, because of isolation or for other reasons, are unable to attend local schools. Standard classroom supplies and authorized textbooks are used in federal schools, which follow generally the curriculum of the province in which they are located.

A two-year kindergarten program has been instituted to give a head start to children who will receive their classroom instruction in a language other than their mother tongue. It has developed very rapidly and it is anticipated that all five-year-olds will be enrolled in school by 1971 and all four-year-olds by 1973. The 1968-69 kindergarten enrolment was about 6,000.

Indians in the Northwest Territories attend regular elementary and secondary schools, along with Eskimo, metis and white young people. The curriculum followed is based on that of Alberta schools but modified in recognition of the different training they will require for life in their northern environment.

28.—Enrolment of Indian Pupils in Elementary and Secondary Schools classified by Type of School and by Grade, School Years Ended 1964-69

Year and Type of School	Grade				Special	Absent from Reserve[1]	Total
	Pre-1	1-6	7-8	9-13			
	No.	No.	No.	No.	No.	No.	No.
1963-64	3,897	35,453	6,161	4,065	770	4,575	54,921
Federal[2]	3,575	24,791	3,089	750	506	—	32,711
Non-federal	322	10,662	3,072	3,315	264	4,575	22,210
1964-65	4,027	36,229	6,758	4,761	804	4,686	57,265
Federal[2]	3,422	24,067	3,292	768	509	—	32,058
Non-federal	605	12,162	3,466	3,993	295	4,686	25,207
1965-66	3,660	38,929	7,107	5,220	1,013	5,466	61,395
Federal[2]	3,093	24,566	3,203	716	462	—	32,040
Non-federal	567	14,363	3,904	4,504	551	5,466	29,355
1966-67	3,830	40,408	7,453	5,510	1,081	6,157	64,439
Federal[2]	2,939	24,672	3,093	427	210	157	31,498
Non-federal	891	15,736	4,360	5,083	871	6,000	32,941
1967-68	4,531	40,188	7,926	5,967	1,305	6,300	66,217
Federal[3]	3,513	24,524	2,879	307	359	—	31,582
Non-federal	1,018	15,664	5,047	5,660	946	6,300	34,635
1968-69	5,916	40,331	8,250	6,832	1,505	..	62,834
Federal[4]	4,363	21,845	2,720	209	346	..	29,483
Non-federal[5]	1,553	18,486	5,530	6,623	1,159	..	33,351

[1] Pupils (and parents) living off the reserves in communities with educational facilities usually attend non-federal schools; no separate records of them are maintained. [2] Excludes non-Indian pupils. [3] Includes 1,231 non-Indian pupils. [4] Includes 1,030 non-Indian pupils. [5] Excludes Yukon and Northwest Territories pupils.

29.—Enrolment of Indian Pupils in Elementary and Secondary Non-federal Schools classified by Grade and by Province, School Year 1968-69

(Exclusive of the Yukon and Northwest Territories)

Grade	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Pre-grade 1	—	94	5	177	222	172	184	175	524	1,553
Grade 1	2	33	40	246	449	494	915	549	946	3,674
2	2	36	29	256	413	360	862	542	671	3,171
3	3	40	44	221	413	315	689	526	646	2,897
4	2	46	70	228	542	303	605	503	678	2,977
5	1	34	73	272	509	318	566	504	653	2,930
6	1	37	70	322	540	328	484	377	678	2,837
7	2	76	79	370	541	268	466	441	635	2,878
8	3	67	72	379	470	163	282	389	827	2,652
9	1	54	49	284	811	282	294	358	701	2,834
10	1	22	28	200	539	234	153	234	477	1,888
11	—	20	18	136	316	144	80	169	324	1,207
12	—	8	11	24	213	58	54	124	165	657
13	—	—	—	—	37	—	—	—	—	37
Special	—	—	1	185	385	94	73	68	353	1,159
Totals	**18**	**567**	**589**	**3,300**	**6,400**	**3,533**	**5,707**	**4,959**	**8,278**	**33,351**

30.—Indian Students in Post-Secondary and Vocational Training, by Province, School Yea 1968-69

(Exclusive of the Yukon and Northwest Territories)

Classification	P.E.I., N.S. and N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
	No.	No.	No.	No.	No.	No.	No.	No.
University	16	51	40	33	35	26	34	235
Teacher training	2	15	15	1	2	—	3	38
Nurse training	1	—	4	4	2	6	3	20
Vocational	155	212	408	118	522	156	548	2,119
Upgrading	129	116	218	107	493	57	323	1,443
Totals	**303**	**394**	**685**	**263**	**1,054**	**245**	**911**	**3,855**

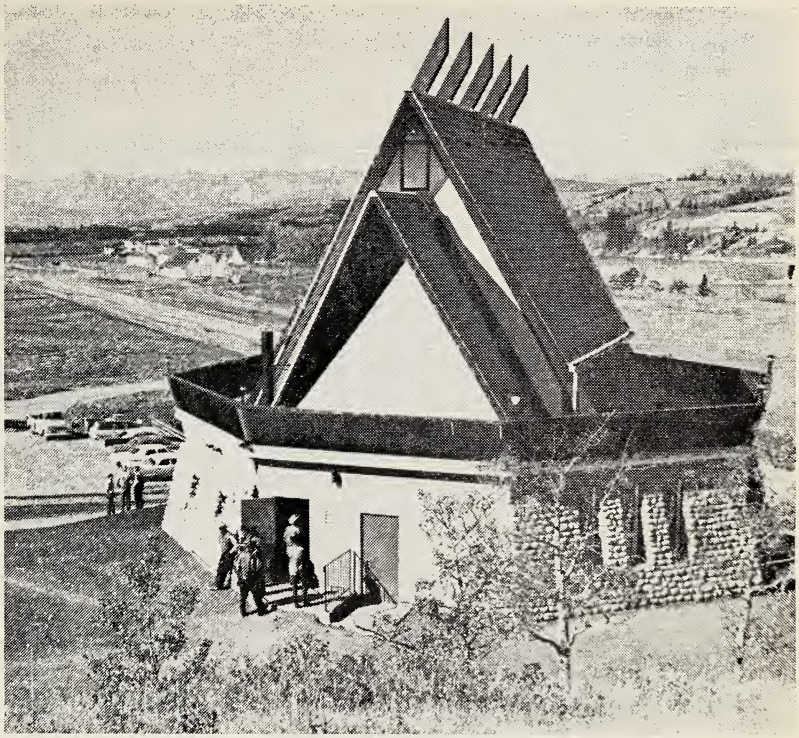
Community Development and Improvement.—The community developmen program, in operation since 1965, has led to much closer involvement of the Indian peopl in the management of their own affairs. In their efforts to accept such responsibility, man Indian bands across the country are developing their own municipal-type administratio In 1969-70, this program was assisted by six regional superintendents of community affair and 46 community development workers (18 of Indian status), together with four worker on contract with the Department and 36 hired by provincial governments. A grants-to bands program makes it possible for participating bands to operate and administer thei own programs through financial and advisory assistance. Expenditure under this prograr increased from $71,065 in 1965 to $2,023,059 in 1969-70, and in the latter year communit affairs turned over a sum of $9,966,808 in program funds to Indian bands for administratio

Federal-provincial community development agreements extending provincial service to the Indian people exist with Ontario, Alberta, Manitoba and Saskatchewan. Costs ar shared on a population basis where both Indians and non-Indians are involved. An ad ditional step forward was taken on Oct. 1, 1969, when the Federal Government, the Mani toba Government and the Manitoba Indian Brotherhood agreed that the Brotherhoo should take over the responsibility for community development in that province. Com munity development services for seven reserves in the Cape Breton area of Nova Scoti are provided under an agreement with the extension department of St. Francis Xavie University at Antigonish.

Over the past few years, encouragement has been given to the Indian people in th development and perpetuation of their own culture. Grants, subsidies and scholarship have been given to individuals, groups and organizations for the development of thei creative and performing talents—Indian fine arts and crafts, literature, dancing, folk song and related activities. Such grants amounted to over $300,000 since the inception of th program in 1965.

In 1969-70, training courses were carried on continually in all seven regions across th country in such fields as leadership, human resource development, band government, home making and folk activities and in many related areas. These courses involved 2,000 India people and 500 departmental staff, for an estimated 13,000 man-days. The human re sources development program alone had an attendance of 43 Indians and non-departmenta staff and 27 departmental staff, for a total of 1,091 man-days.

The Technical Services Branch of the Department assists with the physical develop ment of Indian communities—community planning on reserves, housing accommodatio water and sanitation, electrification, construction and maintenance of roads and bridge etc. Such service is given either directly through the efforts of the community concerne indirectly through consultant planners, or through provincial or regional planning office



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here were 1,794 houses constructed on Indian reserves in the year ended Mar. 31, 1969. inancing and operation of three housing programs on reserves and one off-reserve pro-ram, under way in 1970, may be described as follows:—

1. Subsidy housing program.....	Direct subsidy by the Federal Government.
2. Band-administered housing program....	Band councils may, by resolution, request authority to administer federal appropriation, either as the sole source of financing or in conjunction with band funds and housing loans from the Central Mortgage and Housing Corporation.
3. Indian on-reserve housing program.....	Individual housing loans from the Central Mortgage and Housing Corporation as a sole source of financing or in conjunction with federal subsidy.
4. Off-reserve housing program.....	Indians living away from reserves may secure mortgage funds from the Central Mortgage and Housing Corporation or approved lenders in conjunction with forgivable ten-year second mortgage funds from the Federal Government.

In recent years, emphasis has been placed on overcoming the isolation of many re-erves by the building of roads to facilitate movement between Indian and non-Indian ommunities, the upgrading of roads on reserves adjacent to urban communities, the par-

ticipation of Indian children in off-reserve school programs, the commuting of Indian people to and from centres of employment, and the development of marketing of reserve resources. Where economically feasible, electric power is being installed at Indian reserves, and a potable water supply and adequate sanitation facilities are requirements at all reserves.

In the 1968 tourist season, 114 Indians owned and operated tourist-outfitting establishments, providing employment on a seasonal basis for 520 people. In addition, in the field of tourism and recreation, Indians owned and operated 31 tent and trailer parks, 36 picnic grounds, 36 businesses providing overnight accommodation, eight marinas, six museums and villages, two sightseeing tour businesses and six other operations that combined such facilities. There are approximately 6,700 Indians engaged in producing Indian arts and crafts, 70 of whom operate their own retail outlets. Gross sales for 1968-69 were estimated at $1,500,000. Participation is encouraged by the Department through the provision of raw materials and the operation of a central marketing service and, recently, Indian business leaders in the arts and crafts industry formed an advisory group to work with the Department in devising improved production and marketing facilities. Indian people are actively involved in 123 co-operatives, which had a total membership in 1968-69 of 7,800, fixed and current assets of $3,300,000, members' equity of about $1,200,000 and revenue from business conducted of over $5,000,000.

The Indian Loan Fund continues to provide financing for Indian enterprises. In 1968-69, 139 loans totalling over $1,000,000 were made to farmers, fishermen, lumbermen, craftsmen, bus operators, merchants, tourist-facility operators and others. Advisory services in business planning and operation are available to prospective Indian businessmen in conjunction with the operations of the Fund.

An industrial, commercial and real estate development program was started in January 1969 to encourage the development of secondary industry on or in proximity to Indian reserves. During the year two textile plants were established on reserves and negotiations were under way with a number of manufacturers for the establishment of branch plants on reserves.

Resource and Industrial Development.—The Department, through its Indian-Eskimo Economic Development Branch, assists individuals and bands in their efforts to create business and employment opportunities in service and secondary industries and in the areas of resource utilization and land development, including mineral resources on Indian reserves. Assistance is in the form of loans, grants, technical and management advice and specialized training. Many programs are conducted in co-operation with other federal departments, provincial governments and private organizations.

Statutory responsibilities covering reserve and surrendered lands and the administration of Indian estates are administered by the Branch. At the end of March 1969, some 11,097 leases of or permits to use Indian reserve lands by non-Indians, excluding oil and gas resource leases, were in effect, providing over $5,000,000 annually in income to individuals and bands. Oil and gas resources, which are developed through leasing to non-Indians, continue to provide major revenues for Indian bands in Alberta, and bands in other western provinces and in Ontario also receive revenues from these resources. In 1968-69, revenues from royalties, bonuses and rentals totalled $4,278,795; 2,000,000 acres of Indian oil and gas rights were under contract, 598 under lease and 65 under permit.

The mining resources of the Indian reserves, for many years left under-developed, are receiving increased attention, largely because of a change in policy for disposing of mineral rights and of an increasing interest of band councils in the development of minerals. Since late 1968, Indian band councils may negotiate mining leases and permits direct with the mining companies as an alternative to disposal by public tender.

During 1968-69, some 1,300 Indians were engaged in farming, either full-time or part-time, on 200,000 acres of reserve lands, and another 1,012 operated ranches extending over

530,000 acres. Under the Rotating Herd Program, 9,346 head of cattle in 335 herds were out on loan. The total value of agricultural production on reserve lands exceeded $4,800,000.

Many Indians still depend on fishing and trapping for all or part of their earned income. In 1968-69, 2,300 fishermen produced about 20,000,000 lb. of fish having a gross value of $8,400,000, and over 11,000 trappers brought in furs with an approximate value of $4,000,000, accounting for 30 p.c. of the total wild fur production in Canada. Timber produced from reserve lands amounted to 323,862 cunits (a unit of stacked wood containing 100 cu. feet of solid volume within its outside dimensions) with a value of over $6,000,000, which represented 69 p.c. of the volume of timber cut from all federal lands.

Welfare.—Indians, like other Canadians, are eligible for benefits from a number of welfare programs which are administered by different levels of government, Indian bands and private agencies. Like other Canadians, not all Indians have the same programs available to them, for some programs vary between and within provinces and on and off reserves.

Some Indian bands administer social assistance and child care for persons living on the reserve of the band. The criteria of eligibility and rates of payment for social assistance are generally based on those of the province in which the band is located. Family allow-

Canadian Indians work high above ground on the Nelson River transmission line. More than 70 men from the Fairford and Lake St. Martin Reserves in central Manitoba are working on the project as members of high steel crews.

ances, youth allowances, old age security and the guaranteed income supplement are paid to Indians by the Department of National Health and Welfare on the same basis as they are paid to other Canadians.

Indians are eligible for benefits from some, but not all, provincial welfare programs except in the Northwest Territories. Generally speaking, the provincial programs from which Indians are eligible for benefits are programs for specific categories of persons, such as the blind. Benefits from less specific programs, such as social assistance, are not generally available to Indians living on reserves, although they are in some parts of some provinces.

The federal Department of Indian Affairs and Northern Development provides social assistance, care for children and care for physically handicapped adults for Indians where these are not available from other sources. The criteria of eligibility and the rates used in calculating the amount to which an application for social assistance is entitled are based on those of the provinces in which the person applies for assistance.

Indian Consultation and Negotiation Group.—From March 1968 to May 1969, the Federal Government and Indian representatives from almost every band in Canada discussed the possibility of amending the Indian Act. Eighteen meetings were held across the country at which the Indian people put forward a great many ideas and views. Some were related to possible amendments to the Indian Act and others had as their main theme the over-protective, over-paternalistic functioning of the Indian Affairs Branch. Many reflected a deep discontent with the way in which Indian lands are managed. Nearly all represented a call for change. As the consultations progressed, it became clear that simple amendments to the Indian Act were not enough and the Government therefore undertook a complete review of its programs for Indians, examined its policies and considered the effect of them on the present situation of the Indian people. The review showed that the time had come to change long-standing policies and programs.

On June 25, 1969, the Government's new Indian policy proposals were announced in the House of Commons. The proposals have as their objective the provision of opportunity for Indians to achieve equality in social and economic terms, while retaining their cultural distinctiveness. The aim of the policy is to enable the full, free and non-discriminatory participation of the Indian people in Canadian society. The policy would open new doors, provide choices that are not now available, and make it possible for the Indian people to adapt to the new world but at the same time retain the real values of the past.

The Government believes that to put such a policy into effect and enable individual Indians and Indian bands to achieve full participation in the cultural, social, economic and political life of Canada requires that: (1) those who are farthest behind be helped the most; (2) there be positive recognition by everyone of the unique contribution of Indian culture to Canadian life; (3) services come through the same channels and from the same government agencies for all Canadians; (4) control of Indian lands be transferred to the Indian people; (5) lawful obligations be recognized; and (6) the legislative and constitutional bases of discrimination be removed.

Since the presentation of the proposals, up to the time of writing (May 1970) the main activity was the holding of numerous meetings with various Indian associations and groups and with provincial ministers and officials to explain the policy proposals and discuss their implications. Negotiations had not begun. It is the aim of the Department to stimulate constructive discussions and to consider the counter-proposals that the Indian people may put forward so that the policies developed will reflect the realities of contemporary Canadian social and economic conditions and the aspirations of the Indian people.

The Eskimos

Canada's Eskimo population is growing rapidly. About 16,000 now live in scattered camps and settlements of 25 to 500 people, mainly in the Northwest Territories but also in Arctic Quebec (3,200), Labrador (1,250) and northern Manitoba (365). The factors of

severe climate and isolation have in the past complicated the initial problems of ensuring that all Eskimo people had food, access to health care and warm shelter but good progress has now been made in providing for these basic needs. Medical care is the responsibility of the Department of National Health and Welfare. Administrative responsibility for education, welfare and municipal services for all residents of the Northwest Territories has recently been transferred to the Territorial Government in Yellowknife which will gradually assume other government functions. However, the federal Department of Indian Affairs and Northern Development will continue to manage the natural resources of both the Northwest Territories and Yukon Territory.

Although some Eskimo families still live in hunting camps and take their living from the land, the trend is strongly toward community living centred around the local school, nursing station, trading store and co-operative building. Most Eskimos now live in permanent housing and their acceptance of new ways that are of advantage to them is symbolized by the fact that in most communities the dog-team, traditionally used for transportation, is being replaced by the snowmobile.

With changing conditions, education is a vital factor in the lives of the Eskimo people, both young and old. Although only 15 p.c. of the Eskimo children of school age were enrolled in school in 1953, the system has expanded to such an extent that in 1969-70 about 4,118 Eskimo children were registered in 64 schools in the Northwest Territories and Arctic Quebec, this number representing nearly 95 p.c. of the Eskimo school-age population. For the most part, children attend school in their home communities up to grade six and then go to larger communities for senior grades and for vocational education. When Eskimo children must leave home to continue their education, the Department provides transportation, room and board in pupil residences, clothing and a small weekly allowance. Senior secondary education is available at six high schools in the Northwest Territories, vocational courses at Yellowknife, N.W.T., and pre-vocational courses at Churchill, Man. In many cases, a special curriculum allows older boys and girls with limited academic training to spend half days on academic upgrading and the other half in occupational classes.

Eskimo students who attain senior matriculation may attend university through a system of loans and grants established by the Government of the Northwest Territories for all Territorial residents. Grants cover transportation, tuition and textbooks, and loans may be obtained for costs of maintenance. Although there were only three Canadian Eskimos attending university in 1969-70, others advancing into senior high school grades will be university material in the years immediately ahead.

In the vocational field, those who have adequate academic education may enter technical institutes, teachers' colleges, schools of nursing, business colleges or trade schools in the provinces or they may take on-the-job training. There is a large demand for Eskimos with education and training backgrounds of a high level and it is difficult to find enough of them to fill all requests. During 1969-70, 115 Eskimos were enrolled in training courses outside the Northwest Territories in such varied courses as commercial pilot, nursing aide, fish processing, clerk-typist, barbering, boat building, handicraft management, heavy-duty equipment operating, classroom assistant, and art.

Apprenticeship offers another opportunity for training. Apprentice tradesmen with little education take academic upgrading at night and on-the-job training during the day and at intervals are examined on knowledge of their trade in Eskimo. Throughout the North, there are Eskimo men working at various levels of apprentice training, as heavy equipment operators, plumbers, carpenters and mechanics. They hold positions as interpreters and clerks in retail and co-operative stores and in government offices; one young man is the Area Administrator at Spence Bay. The objective of the Department, in co-operation with other federal departments in the North, is to have 75 p.c. of staff positions in the Territories filled by local residents by 1977.

In vocational classes, Eskimo girls train as clerical assistants, stenographers, hairdressers, nursing aides and commercial cooks. Both boys and girls who are interested in teaching begin their careers in settlement schools as classroom assistants, dividing the day between academic studies and work with young Eskimo pupils. Special care is given to the development of curriculum for northern schools and guides are prepared for such subjects as trapping, fur preparation and the care and use of firearms and outboard motors. By 1972 the Government expects to have sufficient classrooms and pupil residence accommodation to provide for every school-age Eskimo child in the Northwest Territories and Arctic Quebec. This will require the construction of more than 200 classrooms and the provision of 1,000 beds in pupil residences.

The adult education program is designed to inform those of the older generation who feel themselves cut off from children in school. Much emphasis in this area deals with the terms and maintenance of the new housing program. Although permanent houses were introduced in 1959-60, Eskimo families could afford to pay very little toward housing costs. Even families who could purchase these small one-room houses often could not afford the high cost of fuel, light and water. It became apparent that a public housing program was needed to assist the Eskimo people and, in October 1965, government approval was obtained for a five-year program to supply three-bedroom rental houses, allocated on the basis of family need. Rent is scaled according to income, ranging from welfare recipients' payments of $2 a month up to the maximum monthly rental of $67. Services include heating, electricity, water delivery, sewage disposal, and basic furniture. Construction of three-bedroom houses began in 1966 on Baffin Island and in Arctic Quebec, and in the summer of 1968, 140 houses were shipped to the Eastern Arctic, 20 to Arctic Quebec and 100 to the Western Arctic. The rental housing program has now been completed for 15 communities. Credits are given to tenants in new houses for extra rental payments and for improvements or additions to the houses, and 33 p.c. of the rent previously paid is credited toward the purchase price if tenants decide to buy. To help solve the problem of fuel oil for heat and electricity, bulk storage tanks have been installed in many locations and more are being added each year.

In Eskimo communities, the Eskimo people are encouraged to assume management of their own affairs through local or regional councils; practical assistance, advice and financial support are given by the Northwest Territories Government and the federal Department of Indian Affairs and Northern Development. In over 40 communities a development fund acts as a catalyst in social and economic development. The full range of social services applicable to all Canadians is available to the Eskimo people—family allowances, old age and disability pensions and blind persons' allowances. A child welfare program cares for children who are neglected or whose parents are temporarily unable to care for them. Social assistance provides for persons whose income from employment is insufficient to meet their needs and those of their dependants. Medical and public health services are provided for Eskimos not included under provincial arrangements and who are unable to provide for themselves. Eskimos in hospitals in the south are kept in touch with distant family members through tape-recorded messages and medical progress reports. When medical treatment is completed, the Department of Indian Affairs and Northern Development is responsible for the return of Eskimo patients to their homes. Rehabilitation may include adjustment training in sheltered employment and the adaptation of artificial limbs and equipment.

The base of the economy in Eskimo communities is gradually broadening. A number of successful Eskimo co-operatives have been established, engaging in the production of arctic char and arctic trout, fur garment manufacturing, logging, lumbering and house construction, and continuing economic surveys are made to pinpoint local resources that have possibilities of development. Eskimo sculptures, prints and

ine crafts have gained worldwide recognition and bring $1,500,000 annually to Eskimo rtists. Art is a major part of the rich heritage of these people and is supported by cultural xchanges of films, radio programs and exhibitions. Literature in the Eskimo language is eing collected and a regular publication *Inuttituut* is printed in syllabic script and dis-ributed to Eskimo families in the North. The first volume of a pocketbook series printed n syllabics and entitled *The Autobiography of John Ajaruaq*, was published in the fall of 1968.

Although many communities are enjoying greater cash income through the use of ocal resources and the capacities of their people, the need for the establishment of new ndustries to provide employment continues to grow. The young people especially, as hey leave school, must have opportunities for employment to relieve them of following he traditional harsh and marginal existence on the land. This might be done by giving inancial incentives to secondary industry willing to establish in the North. If employ-ment can be provided in this way as well as through primary industry based on mineral esources, the Eskimo population, with its innate ability to live comfortably in the Arctic, can be a tremendous asset to Canada.

ve display of n an Eskimo co-store at Fort mmunity on the ver which flows a Bay on the ast of Quebec.

Section 4.—Statistics of World Population

World population figures given in Table **31** are from the *United Nations Population and Vital Statistics Report* for January 1970 and, except as otherwise noted, are mid-year estimates for 1968. Area figures are from the *United Nations Statistical Yearbook 1968*.

Estimated Population of the World by Continents.—The following statement presents estimates of the 1968 mid-year population of the world by continental divisions. These aggregates do not coincide exactly with the sum of the figures for individual countries

because they include, in addition, adjustments for over- and under-enumeration, over and under-estimation, and data for categories of population not regularly included in the official figures.

Continental Division	*Population*
	'000
Africa	336,000
North America	309,000
South America	180,000
Asia	1,944,000
Europe	458,000
Oceania	18,500
Union of Soviet Socialist Republics	238,000
World Total	3,483,000

31.—Areas and Populations of the Countries or Areas of the World

Note.—Status of independency or dependency is as at May 1970.

Continent and Country	Area	Population
	sq. miles	'000
Africa		
Sovereign Countries		
Algeria	919,595	12,943
Botswana	231,805	611
Burundi	10,747	3,406
Cameroon	183,569	5,562
Central African Republic	240,535	1,488
Chad	495,755	3,460
Congo (Brazzaville)	132,047	870
Congo, Democratic Republic of	905,568	16,730
Dahomey	43,484	2,571
Equatorial Guinea	10,831	281
Ethiopia	471,778	24,212
Gabon	103,347	480
Gambia	4,361	350
Ghana	92,100	8,376
Guinea	94,926	3,795
Ivory Coast	124,504	4,100
Kenya	224,960	10,209
Lesotho	11,720	910
Liberia	43,000	1,130
Libya	679,362	1,803
Madagascar	226,658	6,500
Malawi	45,483	4,285
Mali	478,767	4,787
Mauritania	397,956	1,120
Mauritius (Islands of Mauritius, Rodriques, Agalega and St. Brandon)	790	810
Morocco, incl. Ifni	172,414	14,634
Niger	489,191	3,806
Nigeria	356,669	62,650
Rwanda	10,169	3,405
Senegal	75,750	3,685
Sierra Leone	27,699	2,475
Somalia	246,201	2,745
South Africa	471,445	19,167
Sudan	967,500	14,770
Swaziland	6,704	395
Togo	21,622	1,769
Tunisia	63,379	4,660
Uganda	91,134	8,133
United Arab Republic	386,662	31,693
United Republic of Tanzania	362,821	12,590
Tanganyika	*361,800*	*12,229*
Zanzibar	*1,021*	*361*
Upper Volta	105,869	5,175
Zambia	290,586	4,080

31.—Areas and Populations of the Countries or Areas of the World—continued

Continent and Country	Area	Population
	sq. miles	'000
Africa—concluded		
NON-SOVEREIGN COUNTRIES		
Angola, incl. Cabinda (Port.)	481,354	5,362
British Indian Ocean Territory (U.K.)	30	2
Cape Verde Islands (Port.)	1,557	245
Comoro Islands (Fr.)	838	260
French Southern and Antarctic Territories (Fr.)	2,918	[1]
French Territory of the Afars and the Issas (Fr.)	8,494	81
Mozambique (Port.)	302,330	7,274
Namibia (formerly South West Africa)	318,261	605
Portuguese Guinea (Port.)	13,948	529
Réunion (Fr.)	969	426
St. Helena, excl. dependencies (U.K.)	47	5
Ascension and Tristan da Cunha	74	1
São Tomé and Príncipe (Port.)	372	65
Seychelles (U.K.)	145	49
Southern Rhodesia (U.K.)	150,333	4,940
Spanish North Africa (Sp.)	12	162
Spanish Sahara (Sp.)	102,703	61
America, North		
SOVEREIGN COUNTRIES		
Barbados	166	252
Canada	3,851,809	20,772
Costa Rica	19,575	1,634
Cuba	44,218	8,074
Dominican Republic	18,816	4,029
El Salvador	8,260	3,266
Guatemala	42,042	4,864
Haiti	10,714	4,671
Honduras	43,277	2,413
Jamaica	4,232	1,913
Mexico	761,604	47,267
Nicaragua	50,193	1,842
Panama, excl. Canal Zone	29,209	1,372
Canal Zone	553	56
Trinidad and Tobago	1,980	1,021
United States of America	3,615,211	201,152
NON-SOVEREIGN COUNTRIES		
Antigua (U.K.)	171	62
Bahamas (U.K.)	4,403	177
Bermuda (U.K.)	20	51
British Honduras (U.K.)	8,867	116
British Virgin Islands (U.K.)	59	9
Cayman Islands (U.K.)	100	12
Dominica (U.K.)	290	72
Greenland (Den.)	840,004	45
Grenada (U.K.)	133	103
Guadeloupe (Fr.)	687	318
Martinique (Fr.)	425	324
Montserrat (U.K.)	38	15
Netherlands Antilles (Neth.)	371	215
Puerto Rico (U.S.)	3,435	2,723
St. Kitts-Nevis-Anguilla (U.K.)	138	56
St. Lucia (U.K.)	238	108
St. Pierre and Miquelon (Fr.)	93	5
St. Vincent (U.K.)	150	93
Turks and Caicos Islands (U.K.)	166	6
United States Virgin Islands (U.S.)	133	56

[1] Fewer than 500 persons.

31.—Areas and Populations of the Countries or Areas of the World—continued

Continent and Country	Area	Population
	sq. miles	'000
America, South		
Sovereign Countries		
Argentina	1,072,073	23,617
Bolivia	424,165	4,680
Brazil	3,286,488	88,209
Chile	292,258	9,351
Colombia	439,737	19,825
Ecuador	109,484	5,695
Guyana	83,000	719
Paraguay	157,048	2,231
Peru	496,225	12,772
Uruguay	72,173	2,818
Venezuela	352,145	9,686
Non-sovereign Countries		
British Antarctic Territory (U.K.)	..	[1]
Falkland Islands, excl. dependencies	4,618	2
French Guiana (Fr.)	35,135	46
Surinam (Neth.)	63,037	375
Asia		
Sovereign Countries		
Afghanistan	250,000	16,113
Bahrain	231	200
Bhutan	18,147	750
Burma	261,790	26,389
Cambodia	69,898	6,557
Ceylon	25,332	11,964
China (Mainland)	3,691,523	730,000
China (Taiwan)	13,885	13,466
Cyprus	3,572	622
India, incl. Jammu and Kashmir	1,261,817	523,893
Indonesia, excl. West Irian	575,896	112,825
West Irian	159,376	896
Iran	636,296	26,985
Iraq	167,925	8,634
Israel	7,992	2,745
Japan, incl. Bonin Islands	142,767	101,080
Jordan	37,738	2,103
Korea, incl. area of demilitarized zone	85,032	43,470
North Korea	*46,540*	*13,000*
Republic of Korea	*38,022*	*30,470*
Kuwait	6,178	540
Laos	91,429	2,825
Lebanon	4,015	2,580
Malaysia—		
East Malaysia	77,730	1,535
Sabah	*29,388*	*611*
Sarawak	*48,342*	*924*
West Malaysia	50,700	8,770
Maldives	115	106
Mongolia	604,250	1,210
Muscat and Oman	82,000	565
Nepal	54,362	10,652
Pakistan, excl. Jammu and Kashmir	365,529	109,520
Philippines	115,831	35,883
Qatar	8,500	80
Saudi Arabia	830,000	7,100
Sikkim	2,744	187
Singapore	224	1,988
Southern Yemen	111,075	1,195
Syria	71,498	5,738

[1] Fewer than 500 persons.

31.—Areas and Populations of the Countries or Areas of the World—continued

Continent and Country	Area	Population
	sq. miles	'000
Asia—concluded		
SOVEREIGN COUNTRIES—concluded		
Thailand	198,457	33,693
Trucial Oman	32,278	133
Turkey	301,382	33,539
In Asia	*292,261*	*39,660*
In Europe	*9,121*	*2,879*
Viet-Nam	127,242	38,114
North Viet-Nam	*61,294*	*20,700*
Republic of Viet-Nam	*67,108*	*17,414*
Yemen	75,290	5,000
NON-SOVEREIGN COUNTRIES		
Brunei (U.K.)	2,226	112
Hong Kong (U.K.)	399	3,925
Macau (Port.)	6	260
Palestine	10,460	1,912[1]
Gaza Strip	146	480
Portuguese Timor (Port.)	5,763	580
Ryukyu Islands	848	965
Europe		
SOVEREIGN COUNTRIES		
Albania	11,100	2,019
Andorra	175	18
Austria	32,374	7,350
Belgium	11,781	9,619
Bulgaria	42,823	8,370
Czechoslovakia	49,371	14,362
Denmark	16,629	4,870
Finland	130,120	4,688
France	211,208	49,920
Germany—		
Eastern Germany	41,661	16,002
Federal Republic of Germany	95,743	58,015
East Berlin	156	1,082
West Berlin	186	2,150
Greece	50,944	8,803
Holy See	[2]	1
Hungary	35,919	10,256
Iceland	39,769	201
Ireland	27,136	2,910
Italy	116,304	52,750
Liechtenstein	61	21
Luxembourg	998	336
Malta	122	319
Monaco	[2]	23
Netherlands	12,978	12,743
Norway	125,182	3,819
Poland	120,665	32,305
Portugal, incl. the Azores and Madeira Islands	35,510	9,465
Romania	91,699	19,721
San Marino	24	18
Spain	194,885	32,621
Sweden	173,666	7,918
Switzerland	15,941	6,147
United Kingdom of Great Britain and Northern Ireland	94,221	55,283
England and Wales	*58,348*	*48,593*
Northern Ireland	*5,462*	*1,502*
Scotland	*30,411*	*5,188*
Yugoslavia	98,766	20,154

[1] Latest official estimate. [2] Less than one square mile.

31.—Areas and Populations of the Countries or Areas of the World—concluded

Continent and Country	Area	Population
	sq. miles	'000
Europe—concluded		
NON-SOVEREIGN COUNTRIES		
Channel Islands (U.K.)	75	116
Faeroe Islands (Den.)	540	38
Gibraltar (U.K.)	2	25
Isle of Man (U.K.)	227	50
Svalbard and Jan Mayen Islands (Nor.)	24,101	3[1]
Oceania		
SOVEREIGN COUNTRIES		
Australia	2,967,894	12,031
Nauru	8	6
New Zealand	103,736	2,751
Western Samoa	1,097	137
NON-SOVEREIGN COUNTRIES		
American Samoa (U.S.)	76	31
British Solomon Islands (U.K.)	11,500	147
Canton and Enderbury Islands (U.K. and U.S.)	27	[2]
Christmas Island (Aust.)	52	4
Cocos (Keeling) Islands (Aust.)	5	1
Cook Islands (N.Z.)	90	20
Fiji (U.K.)	7,055	505
French Polynesia (Fr.)	1,544	100
Gilbert and Ellice Islands (U.K.)	342	54
Guam (U.S.)	212	100
Johnston Island (U.S.)	[3]	[2]
Midway Islands (U.S.)	2	2
New Caledonia (Fr.)	7,336	96
New Guinea (Aust.)	92,160	1,677
New Hebrides (U.K. and Fr.)	5,700	78
Niue Island (N.Z.)	100	5
Norfolk Island (Aust.)	14	1
Pacific Islands (U.S.)	687	96
Papua (Aust.)	86,100	599
Pitcairn Island (U.K.)	2	[2]
Tokelau Islands (N.Z.)	4	2
Tonga (U.K.)	270	81
Wake Island (U.S.)	3	1
Wallis and Futuna Islands (Fr.)	77	9
Union of Soviet Socialist Republics		
Union of Soviet Socialist Republics	8,649,539	237,798

[1] Latest official estimate. [2] Fewer than 500 persons. [3] Less than one square mile.

CHAPTER IV.—IMMIGRATION AND CITIZENSHIP

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

PART I.—IMMIGRATION AND EMIGRATION*

Section I.—Immigration Policy and Administration

Policy.—Traditionally, Canada has sought to increase its population through immigration in order to expand the domestic market, reduce per capita costs of administration, stimulate economic activity by providing new skills, ideas and enthusiasm, and support a higher level of cultural independence and creativity. Canadian experience indicates that a substantial volume of immigration is highly desirable but new population cannot be added haphazardly without regard to their means of subsistence or their effect on Canadian life. Technological change and the development of Canadian society to its present complex state require that, to be able to establish themselves successfully, new settlers must be economically competitive in terms of education, training, skills and personal qualities. Over the years, Canada has endeavoured to acquire immigrants who were adaptable to Canadian life. Such persons, finding familiar institutions in Canada, feel more at home and this assists in their establishment in the new life they find here. Canada makes every effort to sustain the movement of immigrants from countries having like economic, social and political backgrounds but people anywhere in the world may immigrate to Canada if they demonstrate their suitability for life in this country and are likely to become established without hardship to themselves or disruption to the communities in which they settle.

It may be mentioned also that Canada, in addition to welcoming immigrants, has on many occasions during the past quarter-century sanctioned the entry of groups of refugees. This is a humanitarian movement and is tangible evidence of Canada's recognition of its responsibilities in the international community. A conservative estimate of the number of refugees admitted since 1945 is 350,000, which includes over 8,000 Czechoslovakians who left their own country following its invasion by the Soviet Union in August 1968.

On Oct. 1, 1967, Canada adopted new Immigration Regulations which are applied universally; these evolved from a White Paper on Immigration, tabled in the House of

* Sections 1 and 2 of this Part were prepared in co-operation with the Information Service, Department of Manpower and Immigration, Ottawa. The history of immigration and the Immigration Act and Regulations up to the mid-1950s is dealt with in detail in a special article entitled "Developments in Canadian Immigration" appearing in the 1957-58 Year Book at pp. 154-176.

Commons on Oct. 14, 1966. After study by a Joint Committee of the Senate and the House of Commons and their consideration of representations by Members of Parliament, representatives of provincial governments, private organizations and individuals, the Regulations were authorized by Order in Council (PC 1967/1616). These Regulations present in detail the principles involved in selection of immigrants, and indicate the factors that immigration officers must take into account in assessing potential immigrants.

The assessment system for potential immigrants is based on the following factors: (1) *Education and Training*—up to 20 assessment units to be awarded on the basis of one unit for each successful year of formal education or occupational training; (2) *Personal Assessment*—up to 15 units on the basis of the immigration officer's assessment of the applicant's adaptability, motivation, initiative and other similar qualities; (3) *Occupational Demand*—up to 15 units if demand for the applicant's occupation is strong within Canada and whether the occupation is skilled or unskilled; (4) *Occupational Skill*—up to 10 units for the professional, ranging down to one unit for the unskilled; (5) *Age*—10 units for applicants under age 35 with one unit deducted for each year over age 35; (6) *Arranged Employment*—10 units if the applicant has a definite job arranged in Canada; (7) *Knowledge of French and English*—up to 10 units, dependent upon the degree of fluency in French and/or English; (8) *Relative*—up to five units if the applicant has a relative in Canada able to help him become established but unprepared or unable to sponsor or nominate him; and (9) *Employment Opportunities in Area of Destination*—up to five units if the applicant intends to go to an area of Canada where there is a generally strong demand for labour.

The Regulations formally confirm that Canadian citizens or permanent residents are entitled to bring their dependants to Canada, making a clear distinction between dependants and relatives entering the working force. Thus, there are three categories of immigrants —"sponsored dependants", "nominated (non-dependent) relatives", and "independent applicants". A "dependant" is defined for immigration purposes as: husband or wife, fiancé or fiancée; unmarried son or daughter under age 21; parent or grandparent over age 60, or younger if widowed or unable to work; an orphaned brother, sister, nephew, niece or grandchild under age 18. Provision is also made for an adopted child and, where the only dependant is a husband or wife, for the nearest living relative. An application for a dependant is dealt with irrespective of whether he is in Canada or abroad and irrespective of the financial circumstances of the sponsor. He will be admitted to Canada provided he is in good health and of good character.

The "nominated (non-dependent) relative" category includes son or daughter over age 21, married son or daughter under age 21, brother or sister, parent or grandparent under age 60, nephew, niece, uncle, aunt or grandchild. The responsibilities of the nominator include willingness and ability to provide accommodation, care and maintenance for the person applied for and to otherwise assist him in becoming established. The nominator is required to sign such an undertaking for a period of five years. Because of the assistance provided by the nominator in Canada, the nominee is assessed on only some of the selection factors—education, personal qualities, occupational demand, age and occupational skill. On the general assumption that a Canadian citizen usually will be better established in Canada than a more recent arrival and hence in a better position to give his relative more assistance, a slightly higher preference is given to a relative nominated by a Canadian citizen than to one nominated by a permanent resident.

To qualify for admission to Canada, an "independent applicant" normally must obtain 50 of the 100 assessment units available, although it is possible to combine factors in such a way that some of them may compensate for relatively low qualifications in others. The major purpose of the standards is to select immigrants who can make a successful adjustment to life in Canada and thereby contribute to the country's progress.

The main factors for successful establishment are education, personal qualities and occupational demand. As far as the education of the individual is concerned, the principle of successful educational achievement in the immigrant's home has been adopted since it has been found impracticable to equate educational standards in many countries to

Canadian standards. In assessment of his personal qualities, the applicant will be considered as to his chances for success in Canada in terms of his economic establishment and his personal satisfaction as well as on the composition and the attitudes of his whole family. The personal assessment process also includes the function of counselling and the applicant is informed about the market in different areas of Canada for his skills and about the difficulties he may encounter in adjusting to the Canadian way of life. The demand in Canada for the applicant's skill or occupation is given due importance. The Department is responsible for immigration but is equally concerned with manpower and is obliged to discourage immigration for the applicant with an occupation for which there is little or no demand in this country. Where there are shortages of labour in certain industries, Canadian employers or provincial officials may interview candidates abroad for such industries and channel them to the Department's visa offices but these candidates also must comply with the selection standards.

The other six selection criteria have individually lesser weight but in total are equal to the three main factors. In considering adaptability in a new environment, occupational skill is important. A person's skill is usually acquired at a price in financial terms. It is an investment and the higher the investment usually the higher the skill and thus the greater the gain to Canada. Age must be taken into account when considering adaptability in a new environment. On average, younger people adjust more easily and for this reason the age group up to 35 years is assigned the maximum number of assessment units, with one unit deducted for each year over 35. However, an older person is not refused on this factor if he has other assets such as highly developed skills that are in demand in Canada. Credit will be given to an applicant who has a firm commitment from a Canadian employer because this will assist his economic establishment during the initial period after arrival. Economic and social adjustment of a new immigrant is greatly facilitated by knowledge of the languages of his adopted country. As a consequence, units of assessment are given to applicants for the degree of their fluency in either English or French or both. An applicant whose mother tongue is other than English or French may be given some credit for even a partial knowledge of either or both of the two languages. In fact, it is possible that such an applicant may obtain more assessment units on the language factor than a unilingual applicant who speaks only English or French. If an applicant has a relative in Canada who is able to help him become established, credit is given for this factor since the presence of a relative is a definite asset in the adjustment process.

No one is compelled to go to any particular area in Canada but, if a prospective immigrant is counselled by an immigration officer to go to an area that offers the best opportunity for him and is prepared to accept that advice, he is awarded the units appropriate for that area. If the over-all demand for labour is higher in any one area in Canada than in others, the total assessment of the immigrant destined to that area reflects that high demand. The assessment of individual areas in Canada as to their over-all demand for labour, and the assessment of national demand for individual occupations is conducted on a continuous basis so that selection officers overseas are in possession of up-to-date information at all times.

The Regulations provide for the admission to Canada for permanent residence of persons who have come as visitors. However, since open acceptance of applications from visitors would be inefficient and would give an undue advantage to some people, a visitor is not given any credit for arranged employment in Canada, so that he must qualify on other factors. Conditions of entry must have been observed and, in particular, the applicant must not have taken employment in Canada if not authorized to do so. Foreign students studying at recognized Canadian institutions are regarded as any other visitors applying for permanent residence in Canada. However, if foreign students are under an obligation to their government to return to their own country, they are not permitted to apply for permanent residence in Canada. Applications for permanent residence from seamen on shore leave are not accepted.

A Canadian citizen sponsor whose application for the admission of a dependant is refused or an immigrant who has been ordered deported has the right to appeal to an inde-

pendent Immigration Appeal Board, the establishment of which was authorized by Act of Parliament in 1967. The Board is a Court of Record, entirely separate from the Department and with the authority to enforce its orders.

Administration.—The Canada Immigration Division of the Department of Manpower and Immigration administers the Immigration Act and Regulations. The creation of the Department of Manpower and Immigration, which came into being officially on Oct. 1, 1966, resulted in a substantial reorganization of the Immigration Division which now has three main Branches. The Programs and Procedures Branch is responsible for the long- and short-range planning of immigration policies and programs, interpretation of the Immigration Act and Regulations and immigration policies, the co-ordination of immigration policies developed internally, functional support in respect of the transportation and initial reception of immigrants in Canada and liaison with transportation companies. The Home Services Branch is responsible for the disposition of difficult individual immigration cases, the provision of procedural guidance to field officers, the formulation of policies and guidelines on the enforcement aspects of immigration operations, and the provision of technical advice on procedures relating to the admission of immigrants and non-immigrants. The Foreign Branch is responsible for the management of the Overseas Service, uniform application of selection standards, promotional activities abroad, implementation of approved programs abroad and the proper counselling and direction of immigrants.

There are 35 visa-issuing offices located abroad—at London, Manchester, Birmingham, Glasgow, Belfast, Dublin, Paris, Bordeaux, Marseille, Brussels, Berne, The Hague, Copenhagen, Cologne, Hamburg, Stuttgart, Vienna, Stockholm, Lisbon, Ponta del Gada, Madrid, Rome, Milan, Athens, Cairo, Tel Aviv, Beirut, New Delhi, Islamabad, Tokyo, Hong Kong, Manila, Sydney, Port of Spain and Kingston (Jamaica). Information offices, visited at intervals by immigration officers based in Stockholm, are maintained in Oslo and Helsinki. Four offices in the United States—at New York, Chicago, San Francisco and Denver—provide information and counselling but do not issue visas. Personnel at all posts are kept in close touch with economic conditions in Canada and thus are able to advise immigrants regarding their prospects for successful establishment in this country. Examination of immigrants and visitors is carried out at 552 ports of entry on Canadian coasts, at points along the International Boundary, and at certain airports and inland offices.

Section 2.—Immigration Statistics

Table 1 shows the number of immigrants arriving in Canada in each year since 1913, the peak year of immigration into the country. Table 2 shows the number and distribution of immigrants in the population of Canada on the latest decennial census date, June 1, 1961, by period of arrival.

1.—Immigrant Arrivals, 1913-69

NOTE.—Figures for 1852-93 are given in the 1942 Year Book, p. 153, and for 1894-1912 in the 1948-49 edition, p. 175.

Year	Arrivals	Year	Arrivals	Year	Arrivals	Year	Arrivals	Year	Arrivals
	No.		No.		No.		No.		No.
1913	400,870	1925	84,907	1937	15,101	1948	125,414	1959	106,928
1914	150,484	1926	135,982	1938	17,244	1949	95,217	1960	104,111
1915	36,665	1927	158,886	1939	16,994	1950	73,912	1961	71,689
1916	55,914	1928	166,783	1940	11,324	1951	194,391	1962	74,586
1917	72,910	1929	164,993	1941	9,329	1952	164,498	1963	93,151
1918	41,845	1930	104,806	1942	7,576	1953	168,868	1964	112,606
1919	107,698	1931	27,530	1943	8,504	1954	154,227	1965	146,758
1920	138,824	1932	20,591	1944	12,801	1955	109,946	1966	194,743
1921	91,728	1933	14,382	1945	22,722	1956	164,857	1967	222,876
1922	64,224	1934	12,476	1946	71,719	1957	282,164	1968	183,974
1923	133,729	1935	11,277	1947	64,127	1958	124,851	1969	161,531
1924	124,164	1936	11,643						

Table 2 shows that, according to census figures, 1,507,116 persons reported that they had come to Canada between Jan. 1, 1946 and June 1, 1961. These immigrants constituted about 75 p.c. of the total number of immigrants who arrived in Canada during that period. According to the records of the Department of Manpower and Immigration, 2,033,598 persons entered Canada as immigrants during the period 1946-61. The difference between this total and the 1,507,116 postwar immigrants reported in the 1961 Census, amounting to 526,482 persons, represents the losses due to death and emigration among the postwar immigrant arrivals up to June 1961. Since this difference is arrived at by comparing statistics derived from two different sources, it must be taken as only an approximate measure of these losses. It is estimated that deaths of immigrants arriving since 1946 would not exceed 86,000 by June 1961. Hence it would appear that roughly 440,000 emigrated in the period between January 1946 and June 1961, or slightly more than one fifth of the total arrivals over this period.

The 440,000 postwar immigrants who appear to have emigrated from Canada up to June 1961 would thus constitute a little over half the total estimated emigration from Canada since 1946, according to data on emigration used in the preparation of annual population estimates. In this connection it might be mentioned that a substantial element in total Canadian emigration is the movement of Canadian-born persons to the United States, some 387,000 entering the United States as immigrants between July 1946 and July 1961 according to the United States Immigration Service records (see p. 274).

2.—Immigrant Population, by Period of Immigration and by Province, Census 1961

Province or Territory	Before 1930	1931-40	1941-45	1946-50	1951-55	1956-61[1]	1946-61[1]	Total
	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland	1,356	339	338	1,317	1,230	1,689	4,236	6,269
Prince Edward Island	1,170	217	117	439	452	597	1,488	2,992
Nova Scotia	14,752	2,165	1,079	4,434	5,281	6,457	16,172	34,168
New Brunswick	10,496	1,451	886	3,184	2,887	4,379	10,450	23,283
Quebec	121,164	14,202	5,321	38,452	87,873	121,437	247,762	388,449
Ontario	462,705	41,959	15,190	169,044	323,528	340,731	833,303	1,353,157
Manitoba	101,758	4,259	1,483	15,925	21,134	25,439	62,498	169,998
Saskatchewan	116,192	3,170	1,034	8,124	9,497	11,372	28,993	149,389
Alberta	156,324	8,446	2,420	25,326	48,263	47,970	121,559	288,749
British Columbia	229,790	11,300	4,498	37,296	65,947	74,301	177,544	423,132
Yukon Territory	867	81	42	265	626	833	1,724	2,714
Northwest Territories	425	114	37	178	472	737	1,387	1,963
Canada	**1,216,999**	**87,703**	**32,445**	**303,984**	**567,190**	**635,942**	**1,507,116**	**2,844,263**

[1] Up to the date of the Census, June 1, 1961.

Recent Immigration.—The extent of immigration to Canada in any period is affected both by domestic conditions and by conditions abroad. However, these influences are seldom immediately decisive. News of good economic conditions in Canada predisposes people in favour of this country but, because the immigration process usually takes several months, actual immigration is not always fully coincidental with the economic situation, so that immigration may at times be slight in good years but appear unduly heavy in less buoyant periods. The time-lag caused by selection, medical examination and documentation is unavoidable. Transportation is often another delaying factor and to these considerations must be added the effect of seasonal unemployment in Canada, which tends to discourage immigration during the months from November to April.

In the early 1960s, the Canadian economy experienced a levelling-off, and even a retrenchment in some areas, from its previous high level of activity and this was reflected in the country's intake of immigrants. However, this interval of economic adjustment lasted only a short time and by 1963 immigration had again risen to more normal levels. In that year 93,151 immigrants came to Canada compared with 74,586 the year before. Promotional efforts abroad were intensified. A resident immigration officer was posted to

Madrid to service immigration applications in Spain and area offices were established to enable teams of immigration officers to make regular visits to adjoining countries in an effort to broaden the base from which immigrants were selected.

In the following year, the number of immigrants admitted to Canada totalled 112,606, a 21-p.c. increase over 1963. By nationality, British immigrants constituted the largest number, followed by Italians and citizens of the United States. This increase was attributable to two principal factors—an intensification of promotional and recruiting activities in the main source countries, and an expansion of examination and selection facilities into areas from which Canada received few immigrants before the establishment of the Immigration Regulations that came into effect early in 1962. The achievements of 1964 were accomplished despite strong competition in Europe for skilled and educated workers and new postwar levels of prosperity. It is, therefore, of considerable significance that, of the 56,190 immigrants who entered the Canadian labour force in that year, 59 p.c. were in the more skilled categories; 13,177 were in the managerial and professional categories, compared with 10,799 in 1963. In 1964, a resident immigration officer was posted to Marseille to expand facilities in France.

In 1965, Canada's demand for skilled immigrant workers once again exceeded the supply. Although skilled workers could be absorbed in large numbers, the need for unskilled workers diminished and for this reason the (then) Immigration Branch continued to emphasize the selection of immigrants possessing professional or other qualifications that would enable them to become established soon after their arrival. Most of the traditional immigrant source countries, particularly in Europe, continued to enjoy buoyant economic conditions. Skilled workers were much in demand and there was strong competition among immigration countries for a share of those skilled workers who were interested in emigration. The number of immigrants admitted to Canada totalled 146,758, a 30-p.c. increase over the preceding year. Immigrant workers who arrived from abroad numbered 74,195, of whom 67 p.c. were in the more skilled categories; those in the managerial and professional categories numbered 18,103. As in the previous year, the major source countries were Britain, Italy and the United States. During 1965, Canadian immigration facilities abroad were substantially improved and expanded. Resident officers were posted to Milan, Italy, and Bordeaux, France, and offices at five other locations were modernized and refurnished.

The rising trend of immigration continued in 1966. In all, 194,743 immigrants came to Canada in that year, an increase of 32 p.c. over 1965. Immigrant workers numbered 99,210, of whom 74 p.c. were in the more skilled categories compared with 67 p.c. in 1965. Those in managerial or professional categories numbered 25,929, which was almost 43 p.c. above 1965 and nearly double the 1964 figure. Of the total of 194,743 immigrants, 63,291 came from Britain, 31,625 from Italy and 17,514 from the United States. There were significant developments in immigration administration and policy during the year. Briefly, as a result of the reorganization of several Federal Government departments, the Immigration Branch of the former Department of Citizenship and Immigration was amalgamated with large segments of the Department of Labour to form the new Department of Manpower and Immigration. The principal advantages to this alignment are that immigration is now more closely identified with national manpower policies, and the extensive services of the Canada Manpower Division in counselling, placing and assisting workers are now fully available to new immigrants (see p. 264). A new policy for dealing with requests from visitors for permanent residence in Canada was introduced with good effect.

In 1967, the second largest number of immigrants arrived in Canada since the end of the Second World War. Of the 222,876 immigrants who came—representing an increase of 14 p.c. over 1966—119,539 were workers of whom 87 p.c. were in the more skilled categories compared with 74 p.c. in 1966. Those in the managerial or professional categories numbered 30,853, a figure 19 p.c. above 1966. Of the total of 222,876 immigrants, 62,420 came from Britain, 30,055 from Italy and 19,038 from the United States.

Developments in Europe, including a more buoyant economy, and conditions in Canada had a significant influence on trends in immigration during 1968 and 1969. A lessening desire on the part of Europeans to migrate to Canada reduced the number of immigrants in 1968 to 183,974 and in 1969 to 161,531. In addition, a strong trend in immigration patterns emerged, highlighted by an increase in the proportion of immigrants from Asia and the West Indies. Although Britain, providing 19.8 p.c. of the immigrant arrivals in 1969, continued to be the major source country, the flow from the United States increased to 14.1 p.c. of the total, and that from Italy accounted for 6.4 p.c. Europe remained the major source area but immigration from Italy showed the largest reduction. There was a substantial decline in the number of applications by Canadian citizens to sponsor relatives from Italy, a factor which previously accounted for a large percentage of the immigration movement from that country.

Analyses of the content of the immigration movement during the years 1967, 1968 and 1969 are given in Tables **3** to **9**, and the numbers of persons deported from Canada for various reasons for the same years in Table **10**.

Table **3** classifies immigrant admission by country of last permanent residence. During the three-year period shown, 24.1 p.c. of the immigration flow came from Britain and the Republic of Ireland, 40.3 p.c. from Continental Europe, 11.0 p.c. from the United States and 24.6 p.c. from all other countries.

3.—Immigrant Arrivals by Country of Last Permanent Residence, 1967-69

NOTE.—Comparable figures from 1946 are given in the corresponding table of previous Year Books beginning with the 1951 edition.

Country	1967	1968	1969	Country	1967	1968	1969
	No.	No.	No.		No.	No.	No.
Commonwealth—				**Europe**—concluded			
British Isles—				Finland	791	740	700
England	43,481	28,623	24,556	France	10,122	8,184	5,549
Northern Ireland	2,644	1,477	1,491	Germany	11,779	8,966	5,880
Scotland	14,953	7,302	5,426	Greece	10,650	7,739	6,937
Wales	1,263	449	490	Hungary	573	529	516
Lesser Isles	79	38	14	Italy	30,055	19,774	10,383
Totals, British Isles	62,420	37,889	31,977	Netherlands	4,401	3,264	2,494
				Poland	1,470	1,092	859
				Portugal	9,500	7,738	7,182
				Scandinavian Countries—			
Australia	4,967	3,710	3,526	Denmark	1,244	1,184	693
Cyprus	399	278	239	Other	1,573	1,067	800
Guyana	736	823	1,865	Spain	1,372	1,367	879
Hong Kong	5,767	7,594	7,306	Switzerland	3,738	3,529	2,307
India	3,966	3,229	5,395	Yugoslavia	2,089	4,660	4,053
Malta	679	447	341	Other	601	1,264	2,089
New Zealand	1,201	1,105	885				
Pakistan	648	627	1,005	**North America**—[1]			
West Indies	7,962	6,969	12,338	Mexico	318	245	377
Other Commonwealth	1,764	1,722	2,399	United States	19,038	20,422	22,785
Totals, Commonwealth	**90,509**	**64,393**	**67,276**	Other	513	700	928
				South America[1]	2,354	1,870	2,902
Republic of Ireland	2,181	1,545	1,235	**Middle East**—[1]			
				Egypt	1,728	1,915	1,429
Africa[1]	2,054[2]	2,484[3]	1,130[4]	Israel	2,345	1,497	863
				Lebanon	1,096	1,682	1,196
Asia[1]	5,322	5,326	5,996	Other	1,227	1,592	1,003
Europe—[1]				**Other Countries**	3	—	3
Austria	2,745	8,125	2,083				
Belgium	1,485	1,081	1,004	**Totals, All Countries**	**222,876**	**183,974**	**161,531**

[1] Excludes Commonwealth countries. [2] Includes 1,366 from the Republic of South Africa. [3] Includes 24 from the Republic of South Africa. [4] Includes 599 from the Republic of South Africa.

Of the immigrant arrivals in 1969, 39.7 p.c. were born in Commonwealth countries or in the Republic of Ireland compared with 33.4 p.c. in 1968 and 40.0 p.c. in 1967, 11.0 p.c. were born in Italy or Greece, 6.3 p.c. in Germany, France or the Netherlands, 11.9 p.c. in the United States, 5.5 p.c. in Spain or Portugal and 4.3 p.c. in Poland or Yugoslavia.

4.—Immigrant Arrivals, by Country of Birth, 1967-69

NOTE.—Figures from 1942 are given in the corresponding table of previous Year Books beginning with the 1948-49 edition.

Birthplace	1967	1968	1969
	No.	No.	No.
Commonwealth—			
British Isles—			
England	37,138	23,472	20,412
Northern Ireland	2,855	1,665	1,594
Scotland	15,575	7,495	5,849
Wales	1,674	1,101	898
Lesser Isles	132	81	37
Totals, British Isles	57,374	33,814	28,790
Australia	4,072	3,045	2,628
Canada	967	1,052	1,134
Cyprus	424	307	271
Guyana	960	1,028	2,044
Hong Kong	2,611	3,353	3,354
India	5,924	4,675	6,736
Malta	730	507	381
New Zealand	1,165	1,100	895
Pakistan	752	626	885
West Indies	9,512	8,091	12,846
Other Commonwealth	1,889	1,898	2,513
Totals, Commonwealth	**86,380**	**59,495**	**62,477**
Republic of Ireland	2,845	1,985	1,627
Africa[1]	3,603	3,741	2,023
Asia[1]			
China	4,142	5,401	5,610
Japan	838	644	750
Other	4,748	4,652	5,087
Europe[1]			
Austria	1,099	862	598
Belgium	1,093	754	769
Europe—concluded			
Czechoslovakia	785	9,847	5,029
Denmark	1,229	1,083	650
Finland	942	819	772
France	7,112	5,370	3,612
Germany	8,327	6,153	4,208
Greece	11,035	7,952	7,106
Hungary	1,514	1,355	1,132
Italy	31,658	20,880	10,685
Netherlands	3,955	3,086	2,412
Norway	556	441	321
Poland	2,221	1,854	1,563
Portugal	10,478	8,720	7,917
Romania	644	502	453
Spain	1,916	1,665	998
Switzerland	2,540	2,067	1,606
Union of Soviet Socialist Republics[2]	698	490	394
Yugoslavia	6,289	6,841	5,462
Other	1,031	768	662
Middle East—[1]			
Egypt	2,289	2,456	1,839
Israel	1,296	961	558
Lebanon	862	1,111	831
Turkey	1,054	957	671
Other	1,118	1,489	864
North America—[1]			
Mexico	277	229	349
United States	16,115	17,076	19,258
Other	647	918	1,104
South America[1]	1,526	1,340	2,114
Other	14	9	20
Grand Totals	**222,876**	**183,974**	**161,531**

[1] Excludes Commonwealth countries. [2] In both Europe and Asia.

5.—Immigrant Arrivals, by Citizenship, 1967-69

NOTE.—Figures from 1930 are given in the corresponding table of previous Year Books beginning with the 1930 edition.

Country of Citizenship	1967	1968	1969
	No.	No.	No.
Australia	4,673	3,380	3,074
Austria	1,044	787	504
Belgium	1,052	742	722
Britain and colonies	64,719	41,466	37,105
Central America	43	70	116
Ceylon	145	123	205
China	4,044	5,259	5,272
Czechoslovakia	343	9,653	4,721
Denmark	1,236	1,061	633
Egypt	1,798	1,948	1,471
Finland	930	806	758
France	7,940	6,020	3,995
Germany	8,224	5,942	3,880
Greece	11,169	8,157	7,134
Haiti	378	599	708
Hungary	705	715	626
India	5,029	3,963	5,939
Ireland, Republic of	2,761	1,871	1,503
Israel	2,337	1,503	868
Italy	32,108	21,232	10,884
Jamaica	4,437	3,477	4,124
Japan	858	628	698
Lebanon	1,062	1,314	985
Luxembourg	21	16	12
Mexico	264	221	335
Morocco	749	1,428	377
Netherlands	4,354	3,312	2,529
New Zealand	1,145	1,126	913
Norway	547	448	324
Pakistan	798	723	1,120
Poland	1,562	1,250	980
Portugal	10,622	8,841	8,031
Rhodesia	62	12	12
South Africa	1,308	948	678
South America	2,205	2,146	3,945
Spain	1,868	1,683	995
Sweden	603	389	288
Switzerland	2,397	1,926	1,531
Trinidad and Tobago	2,392	2,444	5,610
Turkey	764	621	423
Union of Soviet Socialist Republics	301	221	145
United States	18,013	19,059	21,474
Yugoslavia	5,366	6,402	5,241
Other African	340	409	451
Other Asian	5,671	6,808	6,198
Other European	780	20	623
Stateless	2,298	1,792	1,810
Other	1,411	1,013	1,561
Totals	**222,876**	**183,974**	**161,531**

Sex distribution of recent immigrant arrivals is shown in Table 6. In the five years 965-69, adult males comprised 37.2 p.c. of the immigrants, adult females 36.0 p.c. and hildren under 18 years of age the remaining 26.7 p.c. Without relation to age, 49.0 p.c. of he newcomers were females.

.—Sex Distribution of Immigrants as Adult Males, Adult Females and Children, 1965-69

NOTE.—Figures from 1930 are given in the corresponding table of previous Year Books beginning with the 1946 dition.

Item	1965	1966	1967	1968	1969
	No.	No.	No.	No.	No.
lales	74,707	100,349	115,158	93,503	80,007
Under 18 years	*21,761*	*28,724*	*29,905*	*23,922*	*20,553*
Adult	*52,946*	*71,625*	*85,253*	*69,581*	*59,454*
'emales	72,051	94,394	107,718	90,471	81,524
Under 18 years	*20,561*	*27,321*	*28,404*	*22,353*	*19,577*
Adult	*51,490*	*67,073*	*79,314*	*68,118*	*61,947*
Totals, Immigrants	**146,758**	**194,743**	**222,876**	**183,974**	**161,531**

The number of female immigrants coming into Canada was higher than the number f male immigrants in every year from 1957 to 1964. However, the trend was then reversed nd in 1965-68 the number of males exceeded the number of females. In 1969, female mmigrants again outnumbered male immigrants. During that year, in the single category, nales were predominant up to age 40, whereas in the married category females exceeded nales by 3,404, in the widowed category by 3,203 and in the divorced and separated ategory by 650. Of all persons arriving in 1969 who were 15 years of age or over, 52.2 p.c. ere married, 42.3 p.c. were single and 5.4 p.c. were widowed, divorced or separated.

7.—Marital Status of Immigrant Arrivals, by Sex and Age Group, 1968 and 1969

Sex and Age Group	Single	Married	Widowed	Divorced	Separated	Total
1968	No.	No.	No.	No.	No.	No.
lales—						
0 - 14 years	20,986	—	—	—	—	20,986
15 - 19 "	6,681	84	—	1	—	6,766
20 - 24 "	14,523	4,123	4	52	12	18,714
25 - 29 "	9,133	8,912	15	169	48	18,277
30 - 39 "	3,854	12,958	25	357	94	17,288
40 - 49 "	521	5,193	37	188	51	5,990
50 - 59 "	108	2,185	111	63	23	2,490
60 years or over	73	2,303	557	38	21	2,992
Totals, Males	**55,879**	**35,758**	**749**	**868**	**249**	**93,503**
'emales—						
0 - 14 years	19,536	8	—	—	—	19,544
15 - 19 "	5,303	1,601	1	2	1	6,908
20 - 24 "	10,546	9,960	10	64	32	20,612
25 - 29 "	5,446	9,500	29	187	57	15,219
30 - 39 "	2,570	10,165	96	323	91	13,245
40 - 49 "	553	4,402	382	280	85	5,702
50 - 59 "	217	2,248	1,271	174	111	4,021
60 years or over	285	1,734	3,003	113	85	5,220
Totals, Females	**44,456**	**39,618**	**4,792**	**1,143**	**462**	**90,471**

7.—Marital Status of Immigrant Arrivals, by Sex and Age Group, 1968 and 1969—concluded

Sex and Age Group	Single	Married	Widowed	Divorced	Separated	Total
1969	No.	No.	No.	No.	No.	No.
Males—						
0 - 14 years	18,079	—	—	—	—	18,079
15 - 19 "	5,420	75	—	—	2	5,497
20 - 24 "	11,962	3,684	5	36	15	15,702
25 - 29 "	7,847	8,052	7	134	46	16,086
30 - 39 "	3,309	11,555	35	258	112	15,269
40 - 49 "	398	4,190	37	123	63	4,811
50 - 59 "	87	1,761	78	37	20	1,983
60 years or over	56	2,022	441	37	24	2,580
Totals, Males	**47,158**	**31,339**	**603**	**625**	**282**	**80,007**
Females—						
0 - 14 years	16,982	5	—	—	—	16,987
15 - 19 "	4,793	1,542	1	1	3	6,340
20 - 24 "	10,222	9,041	13	63	32	19,371
25 - 29 "	5,715	8,513	21	182	56	14,487
30 - 39 "	2,715	9,024	103	331	96	12,269
40 - 49 "	532	3,343	305	255	92	4,527
50 - 59 "	198	1,833	1,007	146	97	3,281
60 years or over	261	1,442	2,356	123	80	4,262
Totals, Females	**41,418**	**34,743**	**3,806**	**1,101**	**456**	**81,524**

Destinations and Occupations.—Upon arrival in Canada, immigrants are asked to state their intended destinations. According to these records, Ontario absorbed by far the highest proportion of arrivals in the three-year period 1967-69—52.3 p.c. of all the males and 53.2 p.c. of all the females. Quebec was the second province of destination, receiving 19.7 p.c. of the males and 18.8 p.c. of the females, followed by British Columbia with 12.4 p.c. of the males and 12.8 p.c. of the females. The proportions intending to settle in the Prairie Provinces were 13.1 p.c. and 12.8 p.c., respectively, and in the Atlantic Provinces 2.4 p.c. and 2.3 p.c., respectively. The provincial distribution has changed little from year to year throughout the whole postwar period.

8.—Intended Province of Destination of Male and Female Immigrants Admitted to Canada, 1967-69

Province or Territory	1967			1968			1969		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland	505	479	984	505	501	1,006	421	411	832
Prince Edward Island	79	68	147	84	92	176	95	87	182
Nova Scotia	1,349	1,057	2,406	1,031	926	1,957	1,085	1,082	2,167
New Brunswick	685	637	1,322	518	507	1,025	599	640	1,239
Quebec	24,333	21,384	45,717	18,414	17,067	35,481	14,129	14,101	28,230
Ontario	59,780	57,070	116,850	48,419	47,736	96,155	42,720	43,868	86,588
Manitoba	5,048	4,265	9,313	4,712	4,011	8,723	3,083	3,297	6,380
Saskatchewan	1,882	1,872	3,754	1,852	1,705	3,557	1,209	1,283	2,492
Alberta	7,685	7,319	15,004	6,738	6,465	13,203	5,657	5,617	11,274
British Columbia	13,715	13,500	27,215	11,120	11,376	22,496	10,902	11,051	21,953
Yukon and Northwest Territories	97	67	164	110	85	195	107	87	194
Canada	**115,158**	**107,718**	**222,876**	**93,503**	**90,471**	**183,974**	**80,007**	**81,524**	**161,531**

In like manner, immigrant arrivals are asked to record the occupations they intend to follow in Canada. Approximately 52.2 p.c. of the persons admitted in 1969 declared that they would enter the labour force. The other 47.8 p.c. were wives, children and

other dependants or were retired persons. Of the male workers, 35.5 p.c. were classed as managerial, professional and technical, 6.7 p.c. were clerical workers, 6.4 p.c. were in service occupations, 36.2 p.c. were in manufacturing, mechanical and construction trades, 3.0 p.c. were general labourers and 4.0 p.c. were farmers. About 18.9 p.c. of the female immigrants entering the labour force intended to follow service occupations. Details are given in Table 9.

9.—Intended Occupations of Male and Female Immigrants Admitted to Canada, 1968 and 1969

Intended Occupation	1968			1969		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
Workers						
Managerial (owners, managers, officials)	**2,236**	**149**	**2,385**	**2,418**	**148**	**2,566**
Professional and Technical	**19,340**	**9,910**	**29,250**	**17,176**	**9,707**	**26,883**
Professional Engineers—						
Civil	604	7	611	484	7	491
Mechanical	592	14	606	574	7	581
Industrial	335	20	355	457	17	474
Electrical	551	8	559	582	10	592
Mining	174	—	174	160	—	160
Chemical	266	7	273	242	7	249
Other	230	6	236	186	6	192
Physical Scientists—						
Chemists	488	69	557	465	74	539
Geologists	329	7	336	297	12	309
Physicists	208	7	215	171	13	184
Other	23	2	25	23	1	24
Biologists and Agricultural Professionals—						
Biological scientists	277	96	373	263	101	364
Veterinarians	55	3	58	47	3	50
Other	199	13	212	184	22	206
Teachers—						
Professors, principals	1,972	308	2,280	2,063	335	2,398
School teachers	2,924	3,041	5,965	2,819	3,073	5,922
Other instructors	79	82	161	80	86	166
Health Professionals—						
Physicians, surgeons	1,110	167	1,277	1,138	209	1,347
Dentists	82	17	99	76	16	92
Nurses, graduate	167	3,208	3,375	125	3,123	3,248
Therapists	33	165	198	34	128	162
Osteopaths, chiropractors	6	1	7	1	—	1
Pharmacists	86	46	132	57	38	95
Medical and dental technicians	562	607	1,169	444	525	969
Other	70	335	405	65	358	423
Law Professionals	86	5	91	58	5	63
Religion Professionals	346	22	368	306	31	337
Artists, Writers and Musicians—						
Commercial artists	235	52	287	104	31	135
Art teachers	40	24	64	60	50	110
Authors, editors, journalists	301	77	378	221	62	283
Musicians, music teachers	175	82	257	149	96	245
Other Professionals—						
Architects	253	22	275	142	12	154
Draughtsmen	1,819	230	2,049	840	104	944
Surveyors	168	4	172	143	2	145
Actuaries, statisticians	276	56	332	403	81	484
Economists	280	33	313	288	38	326
Computer programmers	7	1	8	27	2	29
Accountants, auditors	548	39	587	473	31	504
Dietitians	4	55	59	11	59	70
Social workers	189	207	396	184	237	421

9.—Intended Occupations of Male and Female Immigrants Admitted to Canada, 1968 and 1969—continued

Intended Occupation	1968			1969		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
Workers—continued						
Professional and Technical—concluded						
Other Professionals—concluded						
Librarians	77	140	217	76	120	196
Interior decorators	95	38	133	81	38	119
Photographers	164	23	187	128	16	144
Science technicians	2,132	273	2,405	1,736	224	1,960
Miscellaneous	723	291	1,014	679	297	976
Clerical	**3,603**	**9,048**	**12,651**	**3,696**	**8,526**	**12,222**
Bookkeepers, cashiers	1,010	1,102	2,112	742	897	1,639
Storekeepers, shipping clerks	254	26	280	209	17	226
Stenographers, typists	112	6,124	6,236	99	5,432	5,531
Other	2,227	1,796	4,023	2,646	2,180	4,826
Transportation	**922**	**4**	**926**	**705**	**5**	**710**
Aircraft operators	113	1	114	85	1	86
Railway operators	22	1	23	13	—	13
Water transport	121	1	122	137	—	137
Road transport	632	1	633	461	3	464
Other	34	—	34	9	1	10
Communication	**119**	**212**	**331**	**65**	**157**	**222**
Commercial	**1,976**	**655**	**2,631**	**2,117**	**627**	**2,744**
Auctioneers, canvassers	27	1	28	8	4	12
Pedlars, commercial travellers	553	62	615	572	42	614
Sales clerks, salesmen	1,395	587	1,982	1,536	580	2,116
Other	1	5	6	1	1	2
Financial	**535**	**29**	**564**	**513**	**30**	**543**
Service and Recreation	**3,646**	**5,589**	**9,235**	**3,560**	**5,500**	**9,060**
Protective service	223	6	229	156	—	156
Cooks	1,216	183	1,399	1,141	151	1,292
Domestic servants	259	3,149	3,408	426	3,381	3,807
Nurses' aides	143	750	893	160	764	924
Waiters, porters	791	292	1,083	843	247	1,090
Athletes, entertainers	134	82	216	151	94	245
Other	880	1,127	2,007	683	863	1,546
Farmers	**3,064**	**100**	**3,164**	**2,208**	**75**	**2,283**
Loggers and Related Workers	**81**	**1**	**82**	**115**	**—**	**115**
Fishermen, Hunters, Trappers	**32**	**—**	**32**	**17**	**—**	**17**
Miners, Well Drillers	**494**	**2**	**496**	**389**	**—**	**389**
Construction	**7,724**	**13**	**7,737**	**5,956**	**8**	**5,964**
Carpenters	970	—	970	1,351	1	1,352
Plumbers	678	1	679	580	1	581
Electricians	1,788	5	1,793	1,189	1	1,190
Painters, glaziers	284	—	284	454	1	455
Bricklayers, stonemasons	1,917	—	1,917	1,245	2	1,247
Cement and concrete workers	76	—	76	44	—	44
Plasterers, lathers	146	—	146	110	—	110
Sheet metal workers	351	1	352	191	2	193
Other (excl. labourers)	1,514	6	1,520	792	—	792
Manufacturing and Mechanical	**19,777**	**3,412**	**23,189**	**14,049**	**3,430**	**17,479**
Food workers	928	35	963	637	28	665
Rubber workers	25	1	26	21	—	21
Leather workers	248	20	268	142	12	154
Textile workers	172	120	292	116	83	199
Tailors, furriers	1,073	2,837	3,910	931	2,976	3,907
Woodworkers, sawyers	1,814	10	1,824	1,052	8	1,060
Paper and chemical workers	113	17	130	71	9	80
Printers, bookbinders	491	45	536	329	32	361
Furnacemen, moulders	282	1	283	177	2	179

9.—Intended Occupations of Male and Female Immigrants Admitted to Canada, 1968 and 1969—concluded

Intended Occupation	1968			1969		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
Workers—concluded						
Manufacturing and Mechanical—concluded						
Jewellers, watchmakers	281	11	292	194	8	202
Machinists	6,595	72	6,667	4,281	83	4,364
Mechanics, repairmen	4,874	32	4,906	4,297	12	4,309
Electrical, electronic workers	1,300	55	1,355	766	50	816
Painters (excl. construction)	392	4	396	181	1	182
Clay, glass, stone workers	158	11	169	101	8	109
Stationary enginemen	378	—	378	232	1	233
Freight handlers	23	—	23	44	—	44
Other	630	141	771	477	117	594
Labourers	**2,175**	**506**	**2,681**	**1,670**	**348**	**2,018**
Not Stated	**57**	**35**	**92**	**584**	**550**	**1,134**
Totals, Workers	**65,781**	**29,665**	**95,446**	**55,238**	**29,111**	**84,349**
Non-workers						
Wives	—	32,091	32,091	—	27,389	27,389
Children	23,373	21,552	44,925	20,003	18,751	38,754
Other	4,349	7,163	11,512	4,766	6,273	11,039
Totals, Non-workers	**27,722**	**60,806**	**88,528**	**24,769**	**52,413**	**77,182**
Totals, Immigrants	**93,503**	**90,471**	**183,974**	**80,007**	**81,524**	**161,531**

Deportations.—Deportations by cause and nationality are shown in Table **10** for the years 1965-69. Persons who have not yet acquired domicile (five years of residence in Canada as landed immigrants) may be deported if they fall into prohibited classes at time of admission or within five years of admission, if they have engaged in commercialized vice, have been convicted under the Criminal Code or have become inmates of prisons, or have gained admission by fraudulent means. The causes that may lead to deportation are narrowed after a person has acquired domicile. A person not a citizen may be deported regardless of length of residence if he is found to be a member of a subversive organization or engages in subversive activities, or if he has been convicted of an offence involving disloyalty to the Queen, or if he has, outside of Canada, engaged in activities detrimental to the security of Canada. A Canadian citizen cannot be deported.

10.—Deportations,[1] by Cause and Nationality, 1965-69

Cause and Nationality	1965	1966	1967	1968	1969
	No.	No.	No.	No.	No.
Cause					
Mental and physical	39	62	80	58	75
Public charges	6	11	12	19	10
Criminality	189	257	419	595	577
Misrepresentation[2] and stealth	502	593	600	1,124	1,197
Other causes	105	96	267	107	95
Totals, Deportations	**841**	**1,019**	**1,378**	**1,903**	**1,954**
Nationality					
British	80	97	118	149	135
United States	222	318	471	835	804
Other	539	604	789	919	1,015

[1] Excludes rejections and persons refused admission. [2] Includes deserting seamen deported.

Section 3.—Emigration Statistics

Emigration from Canada is an important factor tending to offset to some extent present and past immigration activities. The major outward movement has always, of course, been to the United States and that movement, both of native-born Canadians and of Europeans who originally migrated to Canada, has attained considerable proportions at certain periods. No Canadian statistics on emigration are available but Table **11** gives figures taken from the annual reports of the Immigration and Naturalization Service of the United States Department of Justice. These figures show the numbers of persons entering the United States from Canada during the years ended June 30, 1960-69 with the expressed intention of establishing permanent residence in that country. They do not include persons travelling for pleasure, even for extended periods of time, holders of border-crossing cards (normally issued to persons living in border areas of Canada but working in the United States) or casual tourist crossings in these same areas.

Of the 18,582 Canadian-born persons entering the United States in the year ended June 30, 1969 with the intention of remaining permanently, 8,600 were males and 9,982 females. Slightly more than one fifth, or 4,071, of the total native-born emigrants were males in the productive age group, 20-59 years. By occupation, the largest group of the total of 18,582 native-born persons was the professional or technical group which numbered 2,431; clerical and kindred workers numbered 1,086, and craftsmen or foremen numbered 965. On the other hand, 11,667 persons, or 62.8 p.c. of the total, were classed as housewives, children and others with no reported occupation. Altogether, 44.8 p.c. of the total were persons under 20 years of age.

Of the 29,303 persons entering the United States from Canada claiming Canada as country of last permanent residence—which of course includes native-born persons and those born in other countries who have resided in Canada—the Immigration and Naturalization Service of the United States Department of Justice lists 4,821 as professional, technical and kindred workers, 2,251 as craftsmen, foremen and kindred workers and 1,746 as clerical and kindred workers. Housewives, children and others with no reported occupation accounted for 15,836 or 54.0 p.c. of the total.

11.—Canadian-Born Persons Entering the United States from Canada and Elsewhere, and All Persons Entering the United States from Canada, Years Ended June 30, 1960-69

NOTE.—Includes only persons who have declared their intention of remaining permanently in the United States when applying for a visa (see text above). SOURCE: Immigration and Naturalization Service, United States Department of Justice.

Year	Entering U.S. from Canada		Canadian-Born Entering U.S. from Elsewhere	Year	Entering U.S. from Canada		Canadian-Born Entering U.S. from Elsewhere
	Canadian-Born	All Persons			Canadian-Born	All Persons	
	No.	No.	No.		No.	No.	No.
1960.....	30,312	46,668	678	1965.....	37,519	50,035	808
1961.....	31,312	47,470	726	1966.....	27,707	37,273	651
1962.....	29,569	44,272	808	1967.....	22,729	34,768	713
1963.....	35,320	50,509	683	1968.....	27,189	41,716	473
1964.....	37,351	51,114	723	1969.....	18,196	29,303	386

PART II.—CANADIAN CITIZENSHIP

Section 1.—The Canadian Citizenship Act

The Canadian Citizenship Act, which came into force on Jan. 1, 1947,* replacing previous Naturalization Acts, created the distinct nationality of a "Canadian citizen" to be recognized throughout the world and it provided a means whereby those non-Canadian British subjects and aliens who were permanently residing in Canada or those who might subsequently immigrate to Canada could apply for the grant of Canadian citizenship.

Administration of Canadian citizenship is under the jurisdiction of the Department of the Secretary of State, Citizenship Branch. The Branch conducts a number of social development programs that affect the immigrant as well as the native-born citizen. Although these programs have no economic goals, they can nevertheless make valuable contributions by strengthening the individual, the group or the community. The efforts of the Immigrant Participation Division are directed toward the adjustment of newcomers to Canada. Measures are taken to increase the absorptive capacity of communities so that all newcomers, regardless of racial, religious or national background, may be warmly received. Language instruction is provided for adult immigrants under federal-provincial agreements, half of the cost of which is reimbursed by the Federal Government. The Human Rights Division conducts a program designed to help Canadians gain greater understanding of individual and group rights. It gathers considerable information on such subjects as anti-discrimination programs active in the human rights field in Canada and co-ordinates the work of domestic, voluntary and public agencies with respect to Canada's participation in international programs in human rights. The Indian Participation Division seeks to strengthen native leadership and promotes the development of autonomous native organizations and structures. Substantial grants are made each year to native organizations and friendship centres. Indians are encouraged to participate in both on-reserve and off-reserve activities, and particular attention is given to those who settle in urban areas. The Travel and Exchange Division encourages Canadians, through educational travel, to learn more of their own country and their fellow citizens. Although the main aim of this program is citizenship education, it also has socio-economic implications in that it favours exchanges not only of young people but of Canadians of various income levels and of different ethnic backgrounds in the society. East-west and north-south travel and exchange programs increase the knowledge of opportunities and thus have the added value of being an influence on the potential movement of people and goods.

Over the years the Citizenship Act has undergone several amendments, the latest on July 7, 1967. The provisions of the Act, including the 1967 amendments, are outlined briefly in the following paragraphs.

Natural-Born Canadian Citizens, Born before Jan. 1, 1947.—The Act conferred natural-born status upon two categories of persons in being on Jan. 1, 1947. These were (1) those born in Canada or on a Canadian ship or aircraft and who were not aliens on Jan. 1, 1947; and (2) those born of Canadian fathers outside of Canada who were not aliens on Jan. 1, 1947 and were either minors on that date or had already entered Canada for permanent residence.

The Act provides that a person born abroad who was a minor on Jan. 1, 1947 will automatically cease to be a Canadian citizen on his 24th birthday or on Jan. 1, 1954, whichever is the later date, unless he has his place of domicile in Canada at such date or has, before such date and after reaching the age of 21 years, filed a declaration of retention of Canadian citizenship.

* Naturalization procedures and events leading to the passing of the Canadian Citizenship Act are given in the 1951 Year Book, pp. 153-155.

Natural-Born Canadian Citizens, Born after Dec. 31, 1946.—A person born out side of Canada subsequent to that date, whose responsible parent is considered a Canadia citizen pursuant to the terms of the Canadian Citizenship Act, is a Canadian if his birt is registered with the Registrar of Canadian Citizenship within two years of its occurrenc or within such extended period as the Minister may authorize in special cases.

A person who becomes a natural-born Canadian citizen in such a manner will aut matically cease to be a Canadian citizen if he fails to file a declaration of retention prior t his 24th birthday or does not have his place of domicile in Canada upon that date.

Newfoundland and Canadian Citizenship.—On Apr. 1, 1949, Newfoundlan became the tenth province of Canada and every person born therein or naturalized c every British subject who had domicile in Newfoundland on that date or every woman wh married a citizen of Newfoundland and took up residence there before Apr. 1, 1949 becam a Canadian citizen. They acquired the right of conferring Canadian citizenship b descent to their children born outside of Newfoundland in the same manner as those wh had previously become Canadians. Persons born outside of Newfoundland to Newfoun land parents are natural-born Canadian citizens provided they were either minors o Apr. 1, 1949 or had before that date been lawfully admitted to Canada or Newfoundlan for permanent residence. However, a person who was a minor on Apr. 1, 1949, ceased t be a Canadian on his 24th birthday or on July 1, 1968, whichever is the later date, unles he has his place of domicile in Canada at such date or has before such date, and aft reaching the age of 21 years, filed a declaration of retention of Canadian citizenship. person born outside of Canada to Newfoundland parents after Mar. 31, 1949 is a natura born Canadian if his birth is registered with the Registrar of Canadian Citizenship withi two years of its occurrence or within such extended period as the Minister may authoriz in special cases. A person who becomes a natural-born Canadian in such a manner wi automatically cease to be a Canadian citizen if he fails to file a declaration of retentic prior to his 24th birthday or does not have his place of domicile in Canada on that date.

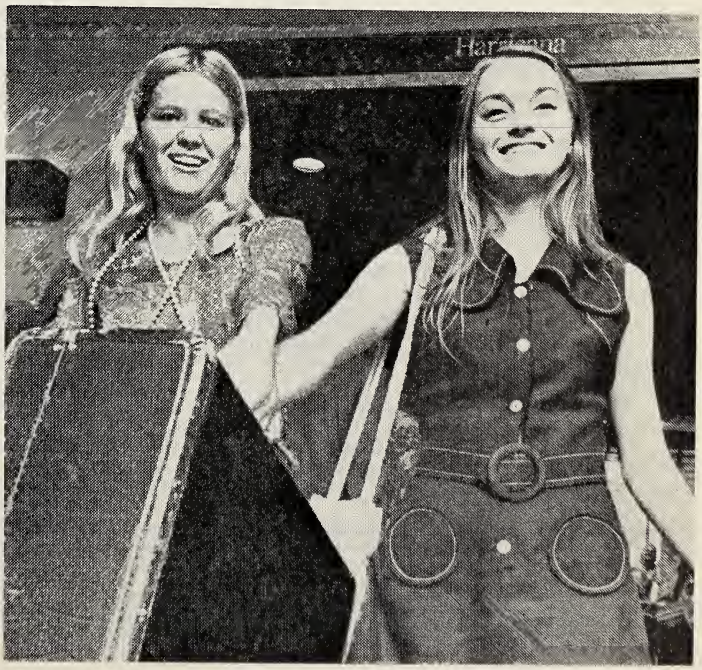
Canadian Citizens other than Natural-Born.—Before the 1953 amendments t the Citizenship Act, the only persons who acquired Canadian citizenship on Jan. 1, 194 through the transitional clauses of Sect. 9 were persons who were naturalized in Canad before that date, British subjects who had Canadian domicile at the commencement of th Act and women lawfully admitted to Canada and married prior to Jan. 1, 1947 who husbands would have qualified as Canadian citizens if the Act had come into force befo the date of marriage. Sect. 9 was amended on June 1, 1953, so that a British subject wh had his place of domicile in Canada for at least 20 years immediately before Jan. 1, 194 need not comply with the requirements of Canadian domicile provided he was not und an order of deportation on Jan. 1, 1947.

Acquisition of Canadian Citizenship by Aliens or British Subjects.—A adult non-Canadian British subject or an alien who wishes to become a Canadian mu formally file an application for citizenship. The non-Canadian British subject may fi an application direct with the Registrar of Canadian Citizenship, whereas an alien mu file an application through his local court, or through one of the special citizenship cour now established or, if he lives more than 50 miles from a court, he may mail his applicati to the Registrar of Canadian Citizenship in Ottawa, who will file it with the appropria court. After the application has been 'posted' for three months, he shall appear befo the court for examination. In either case the same requirements are generally applicable:-

(1) He must have resided in Canada for 12 of the 18 months immediately preceding the da of his application.

(2) He must have been lawfully admitted to Canada for permanent residence and either ha acquired Canadian domicile before July 7, 1967, or have resided in Canada for five of t eight years immediately preceding the filing of his application. Persons living in Cana

Canada's Birthday on July First is celebrated by Governor General Michener and hundreds of children who are his guests at Government House in Ottawa.



ontreal hostess greets her t from Windsor in Ontario. s become commonplace for sh-speaking and French- king high school students to each other's homes during summer, eager to experi- a different environment to understand a different culture.

before obtaining "landed immigrant" status may count half of each full year before landing toward the residence qualification. The wife of a Canadian needs only to be admitted for permanent residence and reside in Canada for one year.

(3) He must be of good character and not under an order of deportation.

(4) He must have an adequate knowledge of either English or French or, alternatively, he is the spouse, widow or widower of a Canadian or, either he was 40 or more years of age at the time of lawful admission and has resided in Canada for more than 10 years or he was less than 40 at the time of admission and has resided continuously in Canada for more than 20 years.

(5) He must have an adequate knowledge of the responsibilities and privileges of citizenship.

(6) He must intend to comply with the Oath of Allegiance and to have his place of domicile permanently in Canada.

At the conclusion of a court hearing, the decision of the court is forwarded to the Minister responsible for the administration of the Canadian Citizenship Act. If the decision is favourable and a certificate of Canadian Citizenship is granted by the Minister, it is forwarded to the clerk of the court who shall inform the applicant of the date and time he is to appear before the court to take the Oath of Allegiance, renounce his previous nationality and receive his certificate. Where a court finds that an applicant does not possess the required qualifications to be granted citizenship, the Minister, upon receipt of the decision, will so advise the applicant and give him notice that he may, within 30 days of receipt of such notice, appeal the decision to the Citizenship Appeal Court. The Citizenship Appeal Court consists of one or more designated judges of the Exchequer Court of Canada. If a court rejects an application and this decision is upheld by the Citizenship Appeal Court or if an application is refused by the Minister, the applicant has the right to file a new application two years after the date of rejection.

Status of Married Women.—The Canadian Citizenship Act places no disabilities upon the married woman. She neither acquires nor does she lose Canadian citizenship by marriage. In order to acquire Canadian citizenship she must apply in exactly the same manner as does a man. The Canadian Citizenship Act also enables a woman married to an alien whose nationality she acquired upon marriage to divest herself of Canadian citizenship by the filing of a declaration of renunciation. Finally, it provides a means whereby a woman, who had become an alien through marriage prior to Jan. 1, 1947, may acquire the Canadian status she would otherwise have assumed on that date.

Status of Minor Children.—Alien and British subject minor children do not automatically become Canadians with their parents. After one parent has become a Canadian the responsible parent of that child, his mother if she has de facto custody of the child or maintains him, the tutor or the legal guardian of the child may apply for citizenship on the child's behalf. Application is made to the Registrar of Canadian Citizenship, Ottawa. Provision is also made in the Citizenship Act for the granting of a certificate of citizenship to a minor child in special circumstances.

Loss of Canadian Citizenship.—Canadian citizenship may be lost in the following manner:—

(1) A Canadian citizen who when outside of Canada and not under disability acquires by voluntary and formal act other than marriage the nationality or citizenship of a country other than Canada. This does not apply if the country is at war with Canada at the time of acquisition but in such a case the Minister may order that he cease to be a Canadian citizen. The purpose of this is to hold the person, if deemed necessary, to his obligations as a Canadian.

(2) A natural-born Canadian citizen who is a dual national by birth or through naturalization and any Canadian citizen on marriage, may after attaining the age of 21 cease to be a Canadian citizen through the making of a declaration of renunciation thereof.

(3) A Canadian citizen who under the law of another country is a national or citizen of such country and who serves in the armed forces of such country when it is at war with Canada. This does not apply if the Canadian citizen became a national or citizen of such country when it was at war with Canada.

Prior to the 1967 amendments of the Citizenship Act, a person, other than a natural-born Canadian, who since becoming a Canadian had resided outside of Canada for 10 consecutive years automatically ceased to be a Canadian; this provision for automatic loss has been removed from the Citizenship Act.

Loss of Citizenship by Revocation—Applicable Both to Non-natural-Born and to Natural-Born Canadians.—Prior to the 1967 amendments of the Citizenship Act, loss of Canadian citizenship by revocation was limited under certain provisions of the Act only to non-natural-born Canadians. This discriminatory distinction between non-natural-born and natural-born Canadians has been removed from the Citizenship Act and the following substituted: Canadian citizenship may be revoked by the Governor in Council if, upon a report from the Minister, he is satisfied that *any Canadian citizen* has, when not under a disability, (1) acquired voluntarily, when in Canada, the citizenship of a foreign country (other than by marriage); (2) taken or made an oath, affirmation or other declaration of allegiance to a foreign country; (3) made a declaration renouncing his Canadian citizenship; or (4) obtained Canadian citizenship by false representation or fraud or by concealment of material circumstances.

Doubt as to Loss of Citizenship.—Where in the opinion of the Minister a doubt exists as to whether a person has ceased to be a Canadian citizen, the Minister may refer the question to the commission referred to in the Citizenship Act for a ruling and the decision of the commission or the court, as the case may be, shall be final.

Section 2.—Canadian Citizenship Statistics

According to the 1961 Census, which required that each person state the country to which he owed allegiance and had citizenship rights as at June 1, 1961, less than 6 p.c. of Canada's population reported a country of citizenship other than Canada. Table 1 shows the citizenship of the population by province.

1.—Citizenship of the Population, by Province, Census 1961

Province or Territory	Canadian	Other Commonwealth	United States	European Countries	Asiatic	Other	Total
	No.	No.	No.	No.	No.	No.	No.
Newfoundland	455,282	1,186	499	763	95	28	457,853
Prince Edward Island	103,618	337	283	364	16	11	104,629
Nova Scotia	725,686	4,568	2,254	4,122	237	140	737,007
New Brunswick	590,662	2,003	2,573	2,443	112	143	597,936
Quebec	5,078,082	31,491	16,585	121,278	4,608	7,167	5,259,211
Ontario	5,673,098	184,429	36,329	317,216	7,309	17,711	6,236,092
Manitoba	879,187	10,059	3,242	26,347	688	2,163	921,686
Saskatchewan	902,106	5,946	3,656	11,664	969	840	925,181
Alberta	1,240,895	21,353	11,674	53,129	1,982	2,911	1,331,944
British Columbia	1,498,498	44,647	10,908	64,641	6,973	3,415	1,629,082
Yukon and Northwest Territories	35,315	671	309	1,228	44	59	37,626
Canada	**17,182,429**	**306,690**	**88,312**	**603,195**	**23,033**	**34,588**	**18,238,247**

Citizenship Certificates Issued and Granted.—Citizenship certificates "issued", as shown in Table 2, are those issued for various reasons to persons who were already Canadian citizens; certificates "granted" means that the holders became Canadian citizens by the grant of such certificate.

2.—Citizenship Certificates Issued and Granted, by Status of Recipient, 1968 and 1969

Certificates	1968	1969	Certificates	1968	1969
	No.	No.		No.	No.
Issued—			**Granted to**—concluded		
To Canadians by—			Alien	43,274	42,764
Birth	2,580	3,870	Adults	*33,597*	*33,990*
Naturalization	1,583	2,150	Minors	*9,195*	*8,253*
Marriage	406	2,992	Adopted or legitimated	*17*	*17*
Domicile	2,291	25,160	Re-acquisition of status	*465*	*504*
To remove doubt	7	2			
Resumption	10	—	**Totals, Granted**	**60,055**	**59,900**
Replacements	3,626	3,782			
Miniatures	51,791	62,439	**Totals, Issued and Granted**	**122,349**	**160,295**
Totals, Issued	**62,294**	**100,395**			
Granted to—					
British	16,781	17,136	**Miscellaneous—**		
Adults	*13,547*	*13,811*	Retention	294	252
Minors	*3,227*	*3,310*	Registration of births abroad	5,459	5,811
Adopted or legitimated	*7*	*15*	Loss by alienation[1]	687	760

[1] Only those cases reported to the Citizenship Branch by posts abroad.

Characteristics of Persons Granted Citizenship Certificates in 1969.—Since 1953 comparable detailed statistics showing the characteristics of persons granted citizenship certificates are available; such characteristics include age, marital status, occupation, period of immigration, residence and previous nationality. The number of applicants fluctuates from year to year but it is known that about 40 p.c. of the immigrants who entered Canada during the past ten years who are eligible for Canadian citizenship have become Canadians.

Of the 59,900 persons granted citizenship in 1969, fewer than 1 p.c. had immigrated to Canada before 1921, 1 p.c. in the period 1921-40, 6 p.c. in the period 1941-50 and 92 p.c. after 1950. Regionally, these new citizens were distributed as follows: 2 p.c. in the Atlantic Provinces, 22 p.c. in Quebec, 49 p.c. in Ontario, 12 p.c. in the Prairie Provinces and 15 p.c. in British Columbia. Almost 89 p.c. of them resided in urban centres.

About 29 p.c. of the persons naturalized in 1969 previously owed allegiance to a Commonwealth country, 14 p.c. were former citizens of Italy, 9 p.c. of Germany, 6 p.c. of the Netherlands, 6 p.c. of Greece, 5 p.c. of Yugoslavia and 4 p.c. of Portugal. Most of the persons designated as "stateless" were born in Poland, the Soviet Union, Yugoslavia, Hungary, Germany, Czechoslovakia or Romania.

Among the males in the labour force naturalized in 1969, craftsmen, production process and related workers occupations were reported by 43 p.c., 17 p.c. were in professional and technical occupations, 11 p.c. were in service and recreation occupations, labourers accounted for 6 p.c., managerial occupations for 8 p.c. and clerical workers and salesmen for 4 p.c. each. Of the females, 45 p.c. were homemakers and, among those employed outside the home, 28 p.c. were in clerical occupations, 26 p.c. were in the craftsmen, production process and related workers occupations group, and 20 p.c. were in service and recreation occupations.

3.—Persons Granted Citizenship Certificates in 1968 and 1969, by Province of Residence, and Period of Immigration to Canada

Year and Residence	Period of Immigration						Born in Canada[1]	Total
	Before 1921	1921–1930	1931–1940	1941–1950	1951–1960	1961–1968		
	No.	No.	No.	No.	No.	No.	No.	No.
1968								
Residing in Canada	**285**	**617**	**203**	**3,663**	**36,449**	**18,424**	**219**	**59,860**
Newfoundland	1	1	—	12	35	27	—	76
Prince Edward Island	1	3	—	3	20	8	—	35
Nova Scotia	5	6	7	87	400	222	1	728
New Brunswick	3	6	1	23	135	73	—	241
Quebec	37	64	25	336	6,349	5,490	34	12,335
Ontario	63	224	70	1,995	19,638	8,835	73	30,898
Manitoba	18	57	16	170	1,217	481	21	1,980
Saskatchewan	37	68	19	102	622	327	21	1,196
Alberta	46	119	41	373	3,183	1,045	31	4,838
British Columbia	73	67	24	558	4,783	1,879	38	7,422
Yukon and Northwest Territories	1	2	—	4	67	37	—	111
Residing Outside Canada	**1**	**1**	**1**	**15**	**130**	**33**	**14**	**195**
Totals, Naturalized	**286**	**618**	**204**	**3,678**	**36,579**	**18,457**	**233**	**60,055**

	Period of Immigration						Born in Canada[1]	Total
	Before 1921	1921–1930	1931–1940	1941–1950	1951–1960	1961–1969		
	No.	No.	No.	No.	No.	No.	No.	No.
1969								
Residing in Canada	**353**	**591**	**204**	**3,427**	**29,205**	**25,742**	**243**	**59,765**
Newfoundland	—	—	2	8	52	61	—	123
Prince Edward Island	—	—	—	5	19	14	—	38
Nova Scotia	2	6	7	50	310	207	8	590
New Brunswick	1	2	—	22	93	101	1	220
Quebec	38	71	14	332	4,967	7,542	32	12,996
Ontario	93	225	76	1,808	14,891	12,430	78	29,601
Manitoba	26	48	7	130	867	655	12	1,745
Saskatchewan	31	52	7	77	465	373	21	1,026
Alberta	64	64	42	295	2,432	1,194	48	4,139
British Columbia	97	123	48	697	5,063	3,119	43	9,190
Yukon and Northwest Territories	1	—	1	3	46	46	—	97
Residing Outside Canada	**1**	**1**	—	**12**	**58**	**43**	**20**	**135**
Totals, Naturalized	**354**	**592**	**204**	**3,439**	**29,263**	**25,785**	**263**	**59,900**

[1] Canadian-born persons who lost their citizenship by marriage; this applies to females only.

4.—Persons Granted Citizenship Certificates in 1968 and 1969, by Age Group, Occupation and Sex

Age Group and Occupation	1968			1969		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
Age Group						
0–14 years	2,742	2,663	5,405	2,746	2,662	5,408
15–19 "	3,118	2,802	5,920	2,760	2,442	5,202
20–29 "	6,455	6,401	12,856	6,756	6,577	13,333
30–39 "	8,765	7,975	16,740	8,822	7,916	16,738
40–49 "	5,911	5,269	11,180	5,918	5,456	11,374
50–59 "	2,270	2,445	4,715	2,122	2,350	4,472
60–69 "	1,104	1,501	2,605	1,082	1,551	2,633
70+ "	266	368	634	280	460	740
Totals	**30,631**	**29,424**	**60,055**	**30,486**	**29,414**	**59,900**
Occupation						
Managerial	1,770	207	1,977	1,791	235	2,026
Professional and technical	3,947	1,632	5,579	4,128	1,850	5,978
Clerical	1,104	2,923	4,027	1,095	2,998	4,093
Transport and communication	692	66	758	632	65	697
Sales	957	447	1,404	1,006	563	1,569
Service and recreation	2,597	1,983	4,580	2,600	2,222	4,822
Farmers and farm workers	793	41	834	611	38	649
Fishermen, trappers and loggers	98	—	98	87	1	88
Miners, quarrymen and related workers	172	1	173	186	—	186
Craftsmen, production process and related workers	10,002	2,841	12,843	10,231	2,823	13,054
Labourers, *n.e.s.*	1,597	75	1,672	1,426	74	1,500
Homemakers	—	13,836	13,836	—	13,303	13,303
No occupation (including students, retired, etc.)	4,280	2,880	7,160	4,220	2,846	7,066
Children under 14 years of age	2,312	2,242	4,554	2,306	2,258	4,564
Not stated[1]	310	250	560	167	138	305

[1] Mainly children over 14 years of age.

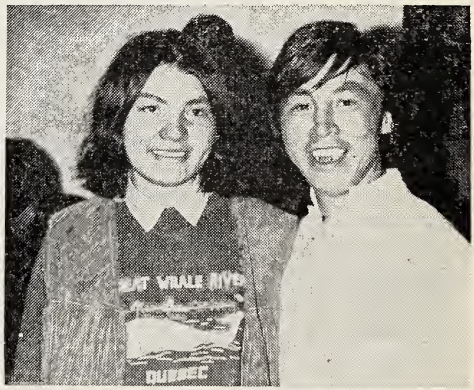
5.—Persons Granted Citizenship Certificates in 1968 and 1969, by Country of Birth

Country of Birth	1968	1969	Country of Birth	1968	1969
	No.	No.		No.	No.
Algeria	66	98	Morocco	206	681
Argentina	79	100	Netherlands	4,234	3,263
Australia	119	139	Norway	133	149
Austria	707	667	Poland	2,443	2,196
Belgium	524	509	Portugal	1,781	2,598
Britain	11,762	11,417	Romania	487	507
Canada	377	390	South Africa	184	234
China	2,331	2,193	Spain	266	401
Czechoslovakia	304	271	Sweden	107	97
Denmark	696	591	Switzerland	245	255
Egypt	1,068	1,625	Turkey	191	306
Finland	552	520	Union of Soviet Socialist Republics[1]	1,069	974
France	962	1,071	United States	1,289	1,276
Germany	5,604	4,611	West Indies	1,080	1,181
Greece	3,560	3,644	Yugoslavia	2,288	2,851
Guyana	414	554	Other	1,269	1,807
Hong Kong	388	403			
Hungary	1,653	1,465	**Totals, All Countries**	**60,055**	**59,900**
India	810	932			
Indonesia	65	55			
Ireland, Republic of	611	703	Commonwealth	15,730	16,213
Israel	215	342	Other Asia	3,481	3,494
Italy	9,205	8,111	Other Europe	37,505	35,828
Japan	90	148	South America	292	387
Lebanon	267	250	United States	1,291	1,276
Malta	354	315	Other	1,756	2,702

[1] Includes Baltic countries.

6.—Persons Granted Citizenship Certificates in 1968 and 1969, by Country of Former Allegiance

Country of Former Allegiance	1968	1969	Country of Former Allegiance	1968	1969
	No.	No.		No.	No.
Commonwealth countries	16,787	17,240	Lebanon	356	350
Austria	665	658	Lithuania	98	69
Belgium	494	450	Netherlands	4,333	3,333
Bulgaria	22	24	Norway	149	159
China	2,286	2,144	Poland	2,094	1,969
Czechoslovakia	172	175	Portugal	1,786	2,612
Denmark	721	608	Romania	204	252
Estonia	118	91	Spain	279	404
Finland	558	525	Sweden	110	110
France	1,070	1,192	Switzerland	240	259
Germany	6,270	5,118	Turkey	110	175
Greece	3,714	3,812	Union of Soviet Socialist Republics	573	484
Hungary	1,545	1,384	United States	1,459	1,462
Israel	511	764	Yugoslavia	2,114	2,738
Italy	9,301	8,241	Other	1,696	2,856
Japan	89	152			
Latvia	131	90	**Totals, All Countries**	**60,055**	**59,900**



Young Canadians in the isolated community of Great Whale River on the east coast of Hudson Bay and those in Toronto would seem to have little in common but a northern excursion made by a group of Toronto students became an enlightening experience for both groups that resulted in mutual enjoyment and new-found friendships.

CHAPTER V.—VITAL STATISTICS*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

Vital statistics provide a key to the interpretation of population development—a measure of the pace at which the population is growing, the rate at which women are marrying and reproducing, and the effect this has on the age and sex distribution of the population, as well as the relative importance of the diseases that cause death each year. Vital statistics constitute the record of births, deaths, marriages and divorces registered in the provinces and territories of Canada. The continuity of such data gives a constant guide to the planning, operation and evaluation of many national activities, particularly in the fields of public health, education, community planning and various types of business enterprise.

This Chapter gives a fairly detailed coverage of the vital statistics information available, gives life tables for males and females and presents a comparison of the principal Canadian vital statistics rates with those of other countries. In making international and interprovincial comparisons of birth, death and marriage rates, it is important to note that part of the differences observed over a period of years as between countries, provinces or local areas may be caused by differences in the sex and age distribution of the populations involved. Similarly, rates for any one area may be affected by changes in such distribution. The population data upon which vital statistics rates are computed are given in Chapter III of this volume. Births and deaths are classified by place of residence (births according to the residence of the mother) and marriages by place of occurrence.

The history of the collection of vital statistics in Canada is covered in the 1948-49 Year Book, pp. 185-188. Detailed information is given in *Vital Statistics* (Preliminary Report) (Catalogue No. 84-201), *Vital Statistics of Canada* (Catalogue No. 84-202), *Causes of Death* (Catalogue No. 84-203) and in other regular and special reports; in addition certain unpublished data are available on request.

* Revised in the Vital Statistics Section, Health and Welfare Division, Dominion Bureau of Statistics. This Chapter carries data for the year 1968, with comparisons for previous years; principal vital statistics for 1969 will be available by the time this volume goes to press and may be found in Appendix II.

Section 1.—Summary of Vital Statistics

Table 1 gives a summary for reference purposes of the principal vital statistics of the provinces and territories of Canada for five-year periods 1941-65 and for single years 1966-68. Table 2 shows similar data for urban centres having at least 20,000 population at the date of the 1966 Census for the year 1968 with comparative averages for 1961-65.

1.—Summary of Principal Vital Statistics, by Province, 1941-68

NOTE.—Figures from 1921, when the collection of national statistics was initiated, are given in previous editions of the Year Book. Figures for neonatal mortality (within the first four weeks of birth) are given on p. 311 and those for divorces on p. 320.

Province and Year	Live Births		Deaths		Natural Increase[1]		Infant Mortality[2]		Maternal Mortality		Marriages	
	No.	Rate[3]	No.	Rate[3]	No.	Rate[3]	No.	Rate[4]	No.	Rate[5]	No.	Rate[3]
Newfoundland—												
Av. 1941-45	9,292	29.8	3,681	11.8	5,611	18.0	852	91.7	39	41.8	2,967	9.5
" 1946-50	12,352	36.2	3,179	9.3	9,173	26.9	754	61.1	25	19.9	2,711	8.0
" 1951-55	13,101	34.1	2,926	7.6	10,175	26.5	598	45.6	24	18.3	2,836	7.4
" 1956-60	14,934	34.6	3,114	7.2	11,820	27.4	585	39.2	17	11.4	3,032	7.0
" 1961-65	15,104	31.8	3,142	6.6	11,962	25.2	538	35.6	7	4.5	3,331	7.0
1966	14,084	28.5	3,072	6.2	11,012	22.3	395	28.0	2	1.4	3,728	7.6
1967	12,844	25.7	3,117	6.2	9,727	19.5	367	28.6	3	2.3	4,021	8.0
1968	12,820	25.3	3,123	6.2	9,697	19.1	309	24.1	3	2.3	4,242	8.4
P.E. Island—												
Av. 1941-45	2,180	23.7	964	10.5	1,216	13.2	114	52.4	9	39.4	686	7.5
" 1946-50	2,869	30.5	922	9.8	1,947	20.7	114	39.7	4	13.2	677	7.2
" 1951-55	2,720	27.2	923	9.2	1,797	18.0	88	32.4	2	8.1	623	6.2
" 1956-60	2,674	26.6	953	9.5	1,721	17.1	87	32.7	1	3.0	645	6.4
" 1961-65	2,767	25.7	1,006	9.3	1,761	16.4	78	28.1	1	2.9	672	6.2
1966	2,199	20.3	1,048	9.7	1,151	10.6	57	25.9	2	9.1	752	6.9
1967	2,047	18.8	1,038	9.5	1,009	9.3	48	23.4	—	—	802	7.4
1968	2,105	19.1	990	9.0	1,115	10.1	56	26.6	—	—	750	6.8
Nova Scotia—												
Av. 1941-45	15,146	25.2	6,326	10.5	8,820	14.7	870	57.5	41	26.9	6,302	10.5
" 1946-50	17,994	28.9	6,042	9.7	11,952	19.2	760	42.2	22	12.0	5,525	8.9
" 1951-55	18,246	27.5	5,802	8.8	12,444	18.7	586	32.1	13	6.9	5,283	8.0
" 1956-60	19,097	26.9	6,062	8.5	13,035	18.4	559	29.3	9	4.7	5,289	7.4
" 1961-65	18,526	24.7	6,312	8.4	12,214	16.3	505	27.2	7	3.6	5,313	7.1
1966	15,220	20.1	6,478	8.6	8,742	11.5	384	25.2	2	1.3	5,833	7.7
1967	14,312	18.9	6,638	8.8	7,674	10.1	326	22.8	3	2.1	6,189	8.2
1968	13,774	18.1	6,610	8.7	7,164	9.4	296	21.5	6	4.4	6,284	8.3
New Brunswick—												
Av. 1941-45	13,037	28.2	5,050	10.9	7,987	17.3	960	73.7	42	32.1	4,433	9.6
" 1946-50	16,878	34 0	4,886	9.8	11,992	24.2	1,015	60.1	23	13.6	4,864	9.8
" 1951 55	16,496	31.0	4,576	8.6	11,920	22.4	717	43.5	16	9.5	4,306	8.1
" 1956-60	16,567	29.0	4,640	8.1	11,927	20.9	567	34.2	8	4.6	4,357	7.6
" 1961-65	15,668	25.8	4,749	7.8	10,919	18.0	419	26.7	7	4.6	4,531	7.5
1966	12,722	20.6	4,771	7.7	7,951	12.9	306	24.1	4	3.1	5,165	8.4
1967	12,353	19.9	4,894	7.9	7,459	12.0	310	25.1	3	2.4	5,452	8.8
1968	11,607	18.6	4,905	7.9	6,702	10.7	235	20.2	6	5.2	5,389	8.6
Quebec—												
Av. 1941-45	97,906	28.4	34,273	9.9	63,633	18.5	6,690	68.3	318	32.5	33,126	9.6
" 1946-50	115,496	30.4	33,723	8.9	81,773	21.5	6,205	53.7	227	19.7	34,874	9.2
" 1951-55	128,523	30.0	34,269	8.0	94,254	22.0	5,662	44.1	149	11.6	35,584	8.3
" 1956-60	139,844	28.6	35,714	7.3	104,130	21.3	5,000	35.8	105	7.5	36,798	7.5
" 1961-65	131,453	24.0	37,698	6.9	93,755	17.1	3,874	29.5	62	4.7	38,126	7.0
1966	109,878	19.0	38,680	6.7	71,198	12.3	2,776	25.3	58	5.3	44,411	7.7
1967	101,471	17.3	38,665	6.6	62,806	10.7	2,347	23.1	33	3.3	46,275	7.9
1968	96,622	16.3	39,537	6.7	57,085	9.6	2,097	21.7	36	3.7	46,004	7.8
Ontario—												
Av. 1941-45	77,738	19.9	39,738	10.2	38,000	9.7	3,276	42.1	197	25.3	38,042	9.7
" 1946-50	105,161	24.6	42,214	9.9	62,947	14.7	3,795	36.1	129	12.3	44,084	10.3
" 1951-55	128,861	26.1	44,715	9.0	84,146	17.1	3,634	28.2	83	6.5	45,213	9.1
" 1956-60	152,688	26.4	49,431	8.5	103,257	17.9	3,741	24.5	65	4.2	46,482	8.0
" 1961-65	152,629	23.5	52,664	8.1	99,965	15.4	3,388	22.2	51	3.3	46,794	7.2
1966	131,942	19.0	54,171	7.8	77,771	11.2	2,669	20.2	36	2.7	54,571	7.8
1967	127,509	17.8	54,878	7.7	72,631	10.1	2,515	19.7	29	2.3	58,377	8.2
1968	126,257	17.3	55,552	7.6	70,705	9.7	2,396	19.0	22	1.7	62,109	8.5

For footnotes, see end of table.

1.—Summary of Principal Vital Statistics, by Province, 1941-68—concluded

Province or Territory and Year	Live Births		Deaths		Natural Increase[1]		Infant Mortality[2]		Maternal Mortality		Marriages	
	No.	Rate[3]	No.	Rate[3]	No.	Rate[3]	No.	Rate[4]	No.	Rate[5]	No.	Rat
Manitoba—												
Av. 1941-45	15,831	21.8	6,633	9.1	9,198	12.7	814	51.4	41	26.0	7,295	10.0
" 1946-50	19,325	25.9	6,702	9.0	12,623	16.9	810	41.9	24	12.6	7,605	10.
" 1951-55	21,321	26.4	6,775	8.4	14,546	18.0	675	31.7	15	7.0	7,104	8.8
" 1956-60	22,408	25.6	7,293	8.3	15,115	17.3	671	30.0	10	4.6	6,600	7.
" 1961-65	22,137	23.4	7,637	8.1	14,500	15.3	553	25.0	8	3.6	6,674	7.
1966	18,007	18.7	7,938	8.2	10,069	10.5	383	21.3	2	1.1	7,312	7.
1967	17,180	17.8	7,629	7.9	9,551	9.9	371	21.6	3	1.7	7,942	8.
1968	17,424	17.9	7,878	8.1	9,546	9.8	363	20.8	4	2.3	8,291	8.
Saskatchewan—												
Av. 1941-45	18,444	21.7	6,437	7.6	12,007	14.1	858	46.5	52	28.1	6,541	7.
" 1946-50	21,907	26.3	6,473	7.8	15,434	18.5	883	40.3	29	13.1	7,413	8.
" 1951-55	23,554	27.5	6,547	7.6	17,007	19.9	743	31.5	16	6.9	6,876	8.
" 1956-60	24,046	26.9	6,753	7.5	17,293	19.4	634	26.3	9	3.8	6,395	7.
" 1961-65	22,811	24.4	7,268	7.8	15,543	16.6	591	25.9	6	2.8	6,316	6.
1966	19,037	19.9	7,427	7.8	11,610	12.1	461	24.2	9	4.7	6,987	7.
1967	17,993	18.8	7,441	7.8	10,552	11.0	465	25.8	4	2.2	7,579	7.
1968	18,197	19.0	7,498	7.8	10,699	11.2	468	25.7	3	1.6	7,747	8.
Alberta—												
Av. 1941-45	18,845	23.7	6,355	8.0	12,490	15.7	827	43.9	46	24.2	7,977	10.
" 1946-50	24,290	28.4	6,814	8.0	17,476	20.4	889	36.6	25	10.5	9,090	10.
" 1951-55	31,087	30.6	7,527	7.4	23,560	23.2	894	28.7	15	5.0	9,750	9.
" 1956-60	36,920	30.6	8,329	6.9	28,591	23.7	940	25.5	13	3.5	10,230	8.
" 1961-65	37,004	26.5	9,317	6.7	27,687	19.8	917	24.8	10	2.6	10,581	7.
1966	30,592	20.9	9,677	6.6	20,915	14.3	640	20.9	6	1.9	11,879	8.
1967	30,691	20.6	9,523	6.4	21,168	14.2	615	20.0	5	1.6	12,903	8.
1968	30,149	19.8	9,963	6.5	20,186	13.3	607	20.1	8	2.7	13,640	8.
British Columbia—												
Av. 1941-45	17,705	19.8	9,368	10.5	8,337	9.3	684	38.6	46	26.2	9,535	10.
" 1946-50	25,859	24.0	10,992	10.2	14,867	13.9	868	33.6	31	11.9	11,564	10.
" 1951-55	31,347	25.1	12,233	9.8	19,114	15.3	856	27.3	17	5.4	11,131	8.
" 1956-60	38,930	25.7	13,980	9.2	24,950	16.5	1,011	26.0	16	4.1	11,955	7.
" 1961-65	36,753	21.5	15,236	8.9	21,517	12.6	843	22.9	10	2.7	11,927	7.
1966	32,502	17.3	16,290	8.7	16,212	8.6	779	24.0	13	4.0	14,682	7.
1967	32,899	16.9	16,170	8.3	16,729	8.6	703	21.4	5	1.5	16,026	8.
1968	33,687	16.8	16,828	8.4	16,859	8.4	661	19.6	11	3.3	16,914	8.
Yukon Territory—												
Av. 1941-45	105	21.0	96	19.3	9	1.7	11	100.8	1	57.0	60	12.
" 1946-50	254	31.7	91	11.4	163	20.3	16	63.0	--	15.8	73	9.
" 1951-55	413	43.0	90	9.4	323	33.6	22	52.8	--	4.8	94	9.
" 1956-60	505	39.4	91	7.1	414	32.3	22	43.6	--	4.0	109	8.
" 1961-65	509	34.9	87	6.0	422	28.9	21	42.0	—	7.9	107	7.
1966	369	25.7	82	5.7	287	20.0	20	54.2	—	—	94	6.
1967	385	25.7	73	4.9	312	20.8	9	23.4	—	—	133	8.
1968	370	24.7	84	5.6	286	19.1	11	29.7	—	—	170	11.
Northwest Territories—												
Av. 1941-45	383	31.9	332	27.7	51	4.2	72	188.5	2	47.0	95	7
" 1946-50	626	39.1	372	23.2	254	15.9	87	138.7	3	54.3	139	8
" 1951-55	666	40.1	284	17.1	382	23.0	78	117.1	2	36.0	115	6
" 1956-60	943	46.7	310	15.3	633	31.4	135	143.2	3	29.7	155	7
" 1961-65	1,174	45.9	250	9.8	924	36.1	109	92.9	1	5.1	154	6
1966	1,158	40.3	229	8.0	929	32.3	90	77.7	1	8.6	182	6
1967	1,210	41.7	217	7.5	993	34.2	75	62.0	—	—	180	6
1968	1,298	41.9	228	7.4	1,070	34.5	84	64.7	—	—	226	7
Canada—[6]												
Av. 1941-45	277,320	23.5	115,572	9.8	161,748	13.7	15,176	54.7	783	29.0	114,091	9
" 1946-50	355,718	27.4	120,438	9.3	235,310	18.1	15,723	44.2	527	14.9	126,898	9
" 1951-55	416,334	28.0	126,666	8.5	289,668	19.5	14,552	35.0	353	8.5	128,915	8
" 1956-60	469,555	27.6	136,669	8.0	332,886	19.6	13,953	29.7	255	5.4	132,017	7
" 1961-65	456,534	24.1	145,368	7.7	311,166	16.4	11,836	25.9	169	3.7	134,524	7
1966	387,710	19.4	149,863	7.5	237,847	11.9	8,960	23.1	135	3.5	155,596	7
1967	370,894	18.2	150,283	7.4	220,611	10.8	8,151	22.0	88	2.4	165,879	8
1968	364,310	17.6	153,196	7.4	211,114	10.2	7,583	20.8	99	2.7	171,766	8

[1] Excess of births over deaths. [2] Deaths under one year of age; deaths within the first four weeks of bi
are given on p. 311. [3] Per 1,000 population. [4] Per 1,000 live births. [5] Per 10,000 live birt
[6] Figures for Newfoundland are included from 1949.

2.—Summary of Principal Vital Statistics for Incorporated Urban Centres of 20,000 Population or Over,[1] 1968 with Average for 1961-65

NOTE.—Birth, death and marriage rates cannot be computed for 1968 or the period 1961-65 since urban centre populations are not known for intercensal periods. Figures for certain urban places may not be comparable for the periods shown because of changes in area boundaries, particularly for those indicated by an asterisk (*). Urban centres are designated in this table by the following abbreviations: c. = city, t. = town, vl. = village, b. = borough, s.m. = suburban municipality, and d.m. = district municipality.

Province and Urban Centre	Live Births		Deaths		Infant Mortality[2]			Neonatal Mortality[3]			Marriages[4]	
	Av. 1961-65	1968	Av. 1961-65	1968	Av. 1961-65	1968		Av. 1961-65	1968		Av. 1961-65	1968
	No.	No.	No.	No.	Rate[5]	No.	Rate[5]	Rate[5]	No.	Rate[5]	No.	No.
Newfoundland—												
Corner Brook, c.	845	644	127	133	36.5	19	29.5	24.4	11	17.1	214	285
St. John's, c.	1,966	1,796	542	608	22.4	19	10.6	15.4	11	6.1	736	997
Prince Edward Island—												
Charlottetown, c.[6]	417	308	232	239	36.9	5	16.2	23.0	5	16.2	157	187
Nova Scotia—												
Dartmouth, c.	1,700	1,393	230	253	24.8	27	19.4	15.8	16	11.5	287	394
Glace Bay, t.	558	417	218	215	36.9	13	31.2	25.4	8	19.2	162	203
Halifax, c.	2,109	1,456	736	787	24.7	27	18.5	17.2	22	15.1	1,047	1,163
Sydney, c.	841	561	297	320	25.4	16	28.5	15.9	12	21.4	265	276
New Brunswick—												
Fredericton, c.	574	462	171	177	19.2	11	23.8	12.5	7	15.2	243	293
Moncton, c.	1,045	790	313	339	19.9	14	17.7	12.6	9	11.4	367	490
Saint John, c.	1,743	1,701	690	850	23.1	28	16.5	15.7	23	13.5	607	759
Quebec—												
Alma, c.	615	406	89	124	31.5	10	24.6	25.0	8	19.7	156	209
Anjou, t.	439	544	52	125	17.8	9	16.5	11.8	7	12.9	46	89
Cap de la Madeleine, c.	649	417	159	172	29.6	7	16.8	20.9	6	14.4	215	273
Charlesbourg, c.	373	558	94	121	18.8	11	19.7	11.8	9	16.1	73	156
Chicoutimi, c.	895	568	193	213	42.2	25	44.0	29.9	15	26.4	241	295
Côte St. Luc, c.	307	284	78	166	15.6	2	7.0	9.1	2	7.0	12	59
Dorval, c.	375	301	83	115	24.5	3	10.0	17.6	3	10.0	56	108
Drummondville, c.	709	566	228	288	64.9	18	31.8	33.0	11	19.4	266	317
Granby, c.	879	643	214	237	28.7	14	21.8	21.6	12	18.7	279	385

For footnotes, see end of table, p. 290.

2.—Summary of Principal Vital Statistics for Incorporated Urban Centres of 20,000 Population or Over,[1] 1968 with Average for 1961-65—continued

Province and Urban Centre	Live Births		Deaths		Infant Mortality[2]			Neonatal Mortality[3]			Marriages[4]	
	Av. 1961-65	1968	Av. 1961-65	1968	Av. 1961-65	1968		Av. 1961-65	1968		Av. 1961-65	1968
	No.	No.	No.	No.	Rate[5]	No.	Rate[5]	Rate[5]	No.	Rate[5]	No.	No.
Quebec—concluded												
Hull, c.	1,640	1,243	419	427	37.6	38	30.6	27.4	27	21.7	430	520
Jacques-Cartier, c.	1,259	1,139	213	286	24.0	27	23.7	17.6	20	17.6	240	318
Jonquière, c.	804	468	141	185	25.4	13	27.8	16.7	12	25.6	218	277
Lachine, c.	846	712	272	314	23.6	9	12.6	18.9	8	11.2	278	374
LaSalle, c.	1,062	1,367	210	297	23.9	24	17.6	17.1	18	13.2	128	235
Laval, c.	3,939	3,289	669	900	22.6	47	14.3	16.0	37	11.2	599	999
Longueuil, c.	639	436	225	174	19.1	9	20.6	13.5	7	16.0	185	233
Montreal, c.	28,576	20,505	10,309	10,613	23.5	423	20.6	17.3	292	14.2	10,548	11,475
Montreal North, c.	1,453	1,472	343	349	29.2	37	25.1	18.3	19	12.9	215	364
Mount Royal, t.	243	219	120	159	14.0	2	9.1	8.2	1	4.6	161	229
Outremont, c.	321	250	272	267	16.2	4	16.0	13.1	4	16.0	204	226
*Pierrefonds, c.	593	462	51	100	12.7	4	8.7	7.6	2	4.3	22	62
Pointe aux Trembles, c.	581	540	204	198	25.1	17	31.5	18.9	13	24.1	111	180
Pointe Claire, c.	403	314	143	126	13.9	—	—	7.9	—	—	107	243
Quebec, c.	3,601	2,585	1,612	1,595	31.5	65	25.1	23.0	54	20.9	1,536	1,616
*Rimouski, c.	458	438	99	152	24.0	6	13.7	16.2	4	9.1	129	237
Ste. Foy, c.	1,038	1,096	158	162	16.6	15	13.7	12.1	11	10.0	130	452
St. Hyacinthe, c.	481	363	284	273	31.2	8	22.0	17.1	6	16.5	222	257
St. Jean, c.	629	459	176	187	21.0	8	17.4	15.9	6	13.1	215	224
St. Jérôme, c.	669	457	169	168	31.1	9	19.7	23.9	7	15.3	252	235
St. Laurent, t.	1,059	958	272	322	18.9	9	9.4	12.3	7	7.3	287	407
*St. Léonard, c.	316	869	45	113	23.0	15	17.3	18.2	11	12.7	22	242
Shawinigan, c.	647	342	191	181	32.7	4	11.7	22.9	4	11.7	241	247
Sherbrooke, c.	1,812	1,489	590	581	29.0	31	20.8	22.2	18	12.1	572	641
Thetford Mines, c.	513	338	135	121	30.0	7	20.7	16.8	3	8.9	158	190
Trois-Rivières, c.	1,384	938	438	397	31.7	22	23.5	23.4	18	19.2	447	456
Valleyfield, c.	673	547	199	233	33.9	14	25.6	22.9	13	23.8	232	261
Verdun, c.	1,547	1,001	606	666	23.8	18	18.0	16.5	12	12.0	528	649
Victoriaville, t.	514	425	170	156	37.3	10	23.5	27.6	9	21.2	178	231
Westmount, c.	224	163	245	220	40.1	8	49.1	19.6	5	30.7	307	343
Ontario—												
Barrie, c.	552	452	194	191	23.2	6	13.3	18.5	3	6.6	208	315
Belleville, c.	744	469	269	284	19.9	7	14.9	15.6	5	10.7	272	326
Brampton, t.	717	771	136	196	21.2	11	14.3	16.2	8	10.4	174	298
Brantford, c.	1,191	1,011	550	660	20.1	15	14.8	15.8	11	10.9	489	624

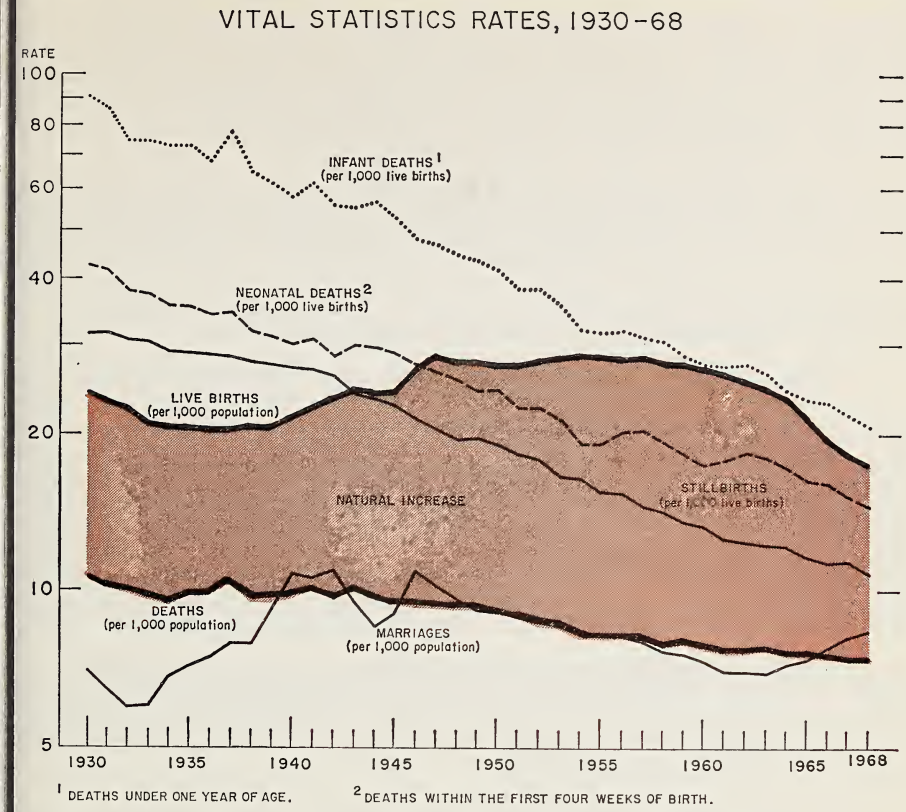
Burlington, t.	1,203	1,326	274	317	18.3	17	12.8	13.1	13	9.8	246	407
Chatham, c.	793	710	285	301	23.4	15	21.1	16.6	14	19.7	293	394
Cornwall, c.	1,103	732	343	353	28.1	11	15.0	20.5	9	12.3	356	424
Eastview, c. (now Vanier City)	974	671	137	122	23.6	10	14.9	18.3	6	9.0	176	196
Etobicoke, b.	5,117	4,056	1,311	1,621	17.4	54	13.3	13.6	39	9.6	881	1,265
Fort William, c. (now part of Thunder Bay)	1,018	825	400	420	21.4	16	19.4	17.1	13	15.8	346	455
Galt, c.	687	673	250	263	22.7	14	20.8	15.4	10	14.9	249	343
Guelph, c.	1,010	989	364	431	23.8	26	26.3	18.0	17	17.2	352	492
Hamilton, c.	6,467	5,296	2,447	2,446	19.6	90	17.0	14.8	68	12.8	2,351	2,925
Kingston, c.	1,363	1,081	481	537	26.6	21	19.4	20.0	12	11.1	527	767
Kitchener, c.	2,081	2,065	564	671	19.8	45	21.8	15.3	38	18.4	655	990
London, c.	4,129	3,658	1,482	1,587	22.0	74	20.2	16.9	61	16.7	1,387	1,908
Mississauga, t.	1,697	2,367	344	460	19.1	40	16.9	13.7	28	11.8	287	507
Niagara Falls, c.	1,151	942	441	465	22.2	16	17.0	18.2	16	17.0	416	501
*North Bay, c.	1,059	800	260	311	19.3	14	17.5	13.6	11	13.8	295	407
*Oakville, c.	905	896	186	231	21.0	14	15.6	16.4	12	13.4	223	459
Orillia, t.	337	300	174	203	26.1	7	23.3	20.2	7	23.3	158	201
Oshawa, c.	1,769	1,612	459	498	23.1	28	17.4	18.5	21	13.0	545	738
Ottawa, c.	6,034	4,756	2,271	2,409	25.7	106	22.3	18.9	86	18.1	2,209	3,049
Peterborough, c.	1,035	870	442	511	19.3	11	12.6	15.8	10	11.5	384	523
Port Arthur, c. (now part of Thunder Bay)	980	744	435	433	22.9	12	16.1	18.2	10	13.4	399	464
St. Catharines, c.	1,910	1,655	696	800	19.1	46	27.8	14.9	39	23.6	666	921
St. Thomas, c.	442	405	282	277	22.6	5	12.3	16.7	5	12.3	228	288
Sarnia, c.	1,220	1,045	358	419	20.6	17	16.3	15.9	16	15.3	373	557
*Sault Ste. Marie, c.	1,439	1,508	385	484	20.0	31	20.6	15.6	28	18.6	488	647
Scarborough, b.	6,419	4,872	1,237	1,559	18.8	63	12.9	15.0	45	9.2	962	1,781
Stratford, c.	431	327	230	244	24.6	5	15.3	18.6	3	9.2	175	253
Sudbury, c.	2,353	1,802	525	570	22.4	33	18.3	17.3	28	15.5	706	933
Timmins, t.	769	594	252	267	31.7	19	32.0	23.9	15	25.3	240	251
Toronto, c.	15,362	13,561	7,354	6,828	22.5	261	19.3	17.2	202	14.9	10,293	13,424
Waterloo, c.	560	586	142	171	15.7	8	13.7	13.2	7	11.9	164	308
Welland, c.	837	642	297	303	24.1	11	17.1	17.4	8	12.5	317	408
*Whitby, t.	360	381	139	182	16.6	6	15.7	11.1	6	15.7	118	175
*Windsor, c.	2,498	3,504	1,274	1,759	24.7	77	22.0	19.1	64	18.3	1,217	1,885
Woodstock, c.	468	444	191	218	23.5	9	20.3	17.5	7	15.8	185	288
York, b.	3,497	3,032	1,022	966	17.1	51	16.8	12.4	43	14.2	488	580
York, E., b.	1,852	1,768	853	934	19.9	35	19.8	15.8	29	16.4	184	187
York, N., b.	7,967	8,329	1,551	2,133	16.0	125	15.0	12.2	88	10.6	943	1,582
Manitoba—												
Brandon, c.	637	513	275	286	29.8	10	19.5	22.0	9	17.5	234	319
Fort Garry, s.m.	430	336	88	102	15.3	3	8.9	13.9	—	—	87	131
Kildonan East, c.	578	408	154	174	16.3	7	17.2	13.1	3	7.4	162	229
Kildonan West, c.	372	273	136	149	11.3	2	7.3	8.1	—	—	72	128
St. Boniface, c.	1,026	800	317	260	16.6	17	21.3	12.5	14	17.5	312	405
St. James, c.	736	507	260	271	18.5	10	19.7	16.0	7	13.3	232	363
St. Vital, c.	659	502	177	198	17.6	9	17.9	12.4	6	12.0	140	226
Winnipeg, c.	5,788	4,593	2,672	2,671	21.7	85	18.5	16.0	58	12.6	2,620	3,098

For footnotes, see end of table, p. 290.

2.—Summary of Principal Vital Statistics for Incorporated Urban Centres of 20,000 Population or Over,[1] 1968 with Average for 1961-65—concluded

Province and Urban Centre	Live Births		Deaths		Infant Mortality[2]			Neonatal Mortality[3]			Marriages[4]	
	Av. 1961-65	1968	Av. 1961-65	1968	Av. 1961-65	1968		Av. 1961-65	1968		Av. 1961-65	1968
	No.	No.	No.	No.	Rate[5]	No.	Rate[5]	Rate[5]	No.	Rate[5]	No.	No.
Saskatchewan—												
Moose Jaw, c.	782	523	333	383	22.5	11	21.0	18.2	10	19.1	292	350
Prince Albert, c.	708	618	186	216	21.2	7	11.3	16.9	6	9.7	266	296
Regina, c.	3,265	2,901	820	928	23.0	64	22.1	17.6	50	17.2	1,004	1,343
Saskatoon, c.	2,770	2,764	769	893	20.4	57	20.6	15.5	40	14.5	923	1,343
Alberta—												
*Calgary, c.	8,083	7,244	2,002	2,260	22.0	119	16.4	16.2	77	10.6	2,410	3,452
Edmonton, c.	9,704	8,764	2,014	2,259	21.2	159	18.1	15.9	119	13.6	3,209	4,399
Lethbridge, c.	841	655	282	309	21.9	5	7.6	15.7	5	7.6	360	443
Medicine Hat, c.	569	446	244	293	22.1	16	35.9	17.9	14	31.4	265	314
Red Deer, c.	676	526	138	174	23.7	10	19.0	18.9	8	15.2	249	329
British Columbia—												
Burnaby, d.m.	2,057	1,757	769	846	19.6	27	15.4	14.6	18	10.3	530	803
Chilliwhack, d.m.	441	363	129	156	24.0	2	5.5	15.9	1	2.8	109	156
Coquitlam, d.m.	745	808	147	174	17.4	8	9.9	12.6	4	5.0	105	186
Delta, d.m.	332	497	100	137	8.4	6	12.1	5.4	3	6.0	74	135
Kamloops, c.	522	495	172	168	26.8	6	12.1	19.5	5	10.1	204	364
New Westminster, c.	596	664	365	446	18.1	16	24.1	13.8	11	16.6	565	861
North Vancouver, c.	550	555	219	238	14.9	9	16.2	11.3	5	9.0	157	274
North Vancouver, d.m.	864	784	228	245	14.8	13	16.6	11.3	9	11.5	140	254
Prince George, c.	623	746	99	128	23.4	8	10.7	16.4	5	6.7	252	389
Richmond, d.m.	1,093	863	231	251	17.6	10	11.6	12.6	6	7.0	171	270
Saanich, d.m.	1,042	820	416	469	16.9	15	18.3	12.7	9	11.0	199	362
Surrey, d.m.	1,761	1,549	550	632	19.5	38	24.5	13.2	27	17.4	288	443
Vancouver, c.	6,743	6,303	4,758	4,985	18.2	100	15.9	13.6	71	11.3	3,881	5,003
Victoria, c.	972	820	898	1,020	21.4	12	14.6	14.4	6	7.3	671	930
West Vancouver, d.m.	373	349	208	272	13.9	1	2.9	8.0	1	2.9	175	304

[1] As at the date of the 1966 Census; residents only. [2] Deaths under one year of age. [3] Deaths under 28 days. [4] By place of occurrence. [5] Per 1,000 live births. [6] Population fewer than 20,000 at date of 1966 Census but included as the largest urban centre in Prince Edward Island.



Section 2.—Births*

No accurate figures on Canadian crude† birth rates are available prior to 1921, when the annual collection of official national figures was initiated. However, the following rough estimates of the average annual crude rates for each ten-year intercensal period between 1851 and 1921 may be inferred from studies of early Canadian census data:—

Intercensal Period	*Estimated Average Annual Crude Birth Rate (per 1,000 Population)*
1851-61	45
1861-71	40
1871-81	37
1881-91	34
1891-1901	30
1901-11	31
1911-21	29

The general trend in the national crude birth rate (i.e., per 1,000 total population) since 1930 is shown in the chart above and since 1941 in Table 1. The annual rates declined gradually but steadily from 29.3 in 1921 to a record low of 20.1 in 1937, recovered sharply in the late 1930s and during World War II to 24.3 in 1945, and following the War

* Unless otherwise indicated, "births" in this Section refers to infants born alive; stillbirths are dealt with under a separate heading on pp. 299-300 and under multiple births on pp. 293-294. For international comparisons, see Section 7, pp. 326-327.

† A crude rate is one based on the *total* population.

rose to a postwar high of 28.9 in 1947. Between 1948 and 1959 the rate remained remarkably stable at between 27.1 and 28.5 but has since been declining and in 1968 reached 17.6, the lowest on record. Part of this decline is attributable to the fact that the crude birth rate is based on *total* population, which now includes larger proportions of 'non-productive' population. Even if the annual number of births were to remain stable, the net effect of an increase in population would be a declining crude birth rate.

The rates in most provinces followed trends very similar to the national trend but showed some regional differences in recent years. Although all provinces had record high rates immediately following World War II, average birth rates in Ontario and the western provinces were higher during the 1951-55 period than during 1946-50 and those for Quebec and the Maritimes were lower than during 1946-50. In fact, Ontario, Alberta and British Columbia had record *high* crude birth rates during the 1956-60 period. In 1968, Nova Scotia, New Brunswick and Quebec had record *low* rates.

It is often erroneously assumed that the Province of Quebec has not only the largest number of births annually but the highest rate in Canada. Since the late 1930s or early 1940s Newfoundland, in some years New Brunswick and, since 1953, Alberta have had higher birth rates than Quebec. Table 1, pp. 285-286, shows that six provinces—Newfoundland, Alberta, New Brunswick, Prince Edward Island, Nova Scotia and Saskatchewan in that order—had higher crude rates than Quebec or Ontario in 1966, followed by Manitoba and British Columbia, and that, in 1968, Quebec had the lowest crude birth rate. However since these crude rates are based on the *total* population they do not reflect the true fertility of the women of reproductive ages in the different provinces or the number married within these reproductive ages. A more accurate measure of the true birth rate is one based on the number of married women between the ages of 15 and 45 (see pp. 294-296).

Also contrary to popular impression, since 1953 more babies were born each year in Ontario than in the Province of Quebec; in 1968, 126,257 babies were born to Ontario mothers as compared with 96,622 to Quebec mothers. Altogether, 364,310 children were born alive in Canada in 1968, 114,965 fewer than the record 479,275 born in 1959 and 6,584 fewer than the number born during 1967.

Sex of Live Births.—With rare exceptions, wherever birth statistics have been collected they have shown an excess of male over female births. No conclusive explanation of this excess has yet been given. Nevertheless, it is so much an accepted statistical fact that a proper ratio of male to female births has become one of the criteria of complete registration. The number of males to every 1,000 females born in Canada has averaged around 1,057 since the middle 1930s. Provincial sex ratios vary much more widely because of the relatively small number of births involved—the smaller the total number of births the greater the chance of wide sex-ratio variations from year to year. In 1968, 1,060 male infants were born for every 1,000 females—the highest ratio since 1952.

3.—Sex Ratios of Live Births, 1941-68

NOTE.—Figures for Newfoundland are included from 1949 and those for the Yukon and Northwest Territories from 1950.

Year	Males	Females	Males to 1,000 Females	Year	Males	Females	Males to 1,000 Females
	No.	No.	No.		No.	No.	No.
1941	131,175	124,142	1,057	1963	238,865	226,902	1,053
1951	195,918	185,174	1,058	1964	232,657	220,258	1,056
1959	246,073	233,202	1,055	1965	215,112	203,483	1,057
1960	246,029	232,522	1,058	1966	198,928	188,782	1,054
1961	244,403	231,297	1,057	1967	189,847	181,047	1,049
1962	240,870	228,823	1,053	1968	187,489	176,821	1,060

Hospitalized Births.—In 1968, 99.5 p.c. of all Canadian births occurred in hospital as compared with 91.7 p.c. ten years previously. Before the initiation in 1958 of the federal-provincial hospital insurance programs—in which all provinces were participating by 1961—there were rather wide variations among the provinces in percentages of hospitalized births. Such variations were caused by the existence of prepaid or provincially sponsored hospital, maternity or medical care plans in some provinces, the unavailability of hospital facilities in others—particularly in remote rural areas—and preference for home delivery in some local areas. Little variation now exists and only in the Yukon and Northwest Territories do the percentages fall below 99.2 p.c.; in the Yukon Territory it was 96.8 p.c. in 1968 and in the Northwest Territories 88.0 p.c.

Births in Urban Centres.—Table 2, pp. 287-290, shows the number of births in 1968, as compared with the average for 1961-65, to mothers residing in each urban centre of 20,000 population or over in 1968. Because the populations of urban centres are not known for intercensal years, birth rates cannot be computed for those years.

Illegitimacy.*—In 1968, 9.0 p.c. of the live births in Canada were illegitimate. This percentage is low compared with that of many countries of the world but has been rising recently, as shown in Table 4. In some provinces the percentages of illegitimate births have more than doubled during the past 20 years. It should be noted that the increase in the proportion of the illegitimate births is attributable to two factors: first, the relative increase in the proportion of women aged 15-24 (in the female population of child-bearing age) where the probability of having an illegitimate birth is the highest; and second, since legitimate fertility has declined sharply in recent years, the relative weight of the illegitimate fertility has increased.

4.—Illegitimate Live Births and Percentages of Total Live Births, by Province, 1941-68

NOTE.—Figures for Newfoundland are included from 1949 and those for the Yukon and Northwest Territories from 1951.

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	NUMBERS												
Av. 1941-45	406	107	1,074	591	3,003	3,751	597	673	852	889	..	..	11,536
" 1946-50	441	152	1,244	754	3,382	4,256	766	914	1,202	1,516	..	..	14,375
" 1951-55	426	139	1,082	659	4,086	4,065	969	1,044	1,481	1,898	53	50	15,951
" 1956-60	587	139	1,201	687	4,675	4,891	1,166	1,194	1,941	2,505	72	102	19,160
" 1961-65	716	132	1,437	803	5,595	6,519	1,672	1,565	2,786	3,137	91	152	24,605
1966.....	832	145	1,551	882	6,366	8,476	1,844	1,923	3,198	3,926	72	176	29,391
1967.....	858	138	1,544	861	6,727	8,935	1,915	1,916	3,518	4,194	86	223	30,915
1968.....	948	156	1,453	889	7,018	9,463	2,102	2,148	3,614	4,502	79	257	32,629
	PERCENTAGES OF TOTAL LIVE BIRTHS												
Av. 1941-45	4.4	4.9	7.1	4.5	3.1	4.8	3.8	3.6	4.5	5.0	..	..	4.2
" 1946-50	3.6	5.3	6.9	4.5	2.9	4.0	4.0	4.2	4.9	5.9	..	..	4.1
" 1951-55	3.2	5.1	5.9	4.0	3.2	3.2	4.5	4.4	4.8	6.1	12.9	7.5	3.8
" 1956-60	3.9	5.2	6.3	4.1	3.3	3.2	5.2	5.0	5.3	6.4	14.2	10.8	4.1
" 1961-65	4.7	4.8	7.8	5.1	4.3	4.3	7.6	6.9	7.5	8.5	17.8	13.0	5.4
1966.....	5.9	6.6	10.2	6.9	5.8	6.4	10.2	10.1	10.5	12.1	19.5	15.2	7.6
1967.....	6.7	6.7	10.8	7.0	6.6	7.0	11.1	10.6	11.5	12.7	22.3	18.4	8.3
1968.....	7.4	7.4	10.5	7.7	7.3	7.5	12.1	11.8	12.0	13.4	21.4	19.8	9.0

Multiple Births.—Approximately 1 p.c. of the confinements result in multiple births, and 99 p.c. of the multiple births are twins. One out of about 10,000 confinements results in triplets. Two sets of quadruplets were born in 1960 and one set in each of 1962, 1963, 1964 and 1968. In 1968 a total of 364,593 mothers bore a total of 368,253 infants, of which 364,310, or almost 99 out of every 100, were born alive.

*The term "illegitimate", as used here, does not refer to all births conceived out of wedlock but is necessarily restricted to those in which parents reported themselves as not having been married to each other at the time of birth or registration and, in Ontario, to those in which the marital status of the mother was reported as "single" at the time of birth or registration.

5.—Single and Multiple Births, Live and Stillborn,[1] 1965-68

Confinements and Births	Numbers				Percentages			
	1965[2]	1966[3]	1967[2]	1968[4]	1965	1966	1967	1968
Confinements	**419,093**	**388,162**	**371,378**	**364,593**	**100.0**	**100.0**	**100.0**	**100.0**
Single	414,754	384,183	367,629	360,965	99.0	99.0	99.0	99.0
Twin	4,307	3,948	3,712	3,597	1.0	1.0	1.0	1.0
Triplet	32	31	37	30	--	--	--	--
Quadruplet	—	—	—	1	—	—	—	--
Births	**423,464**	**392,172**	**375,164**	**368,253**	**100.0**	**100.0**	**100.0**	**100.0**
Single—								
Live	410,123	379,970	363,601	357,221	98.9	98.9	98.9	99.0
Stillborn	4,631	4,213	4,028	3,744	1.1	1.1	1.1	1.0
Twin—								
Live	8,382	7,653	7,187	7,000	97.3	96.9	96.8	97.3
Stillborn	232	243	237	194	2.7	3.1	3.2	2.7
Triplet—								
Live	90	87	106	85	93.8	93.5	95.5	94.4
Stillborn	6	6	5	5	6.3	6.5	4.5	5.6
Quadruplet—								
Live	—	—	—	4	—	—	—	100.0
Stillborn	—	—	—	—	—	—	—	—
Totals, Live Births	**418,595**	**387,710**	**370,894**	**364,310**	**98.9**	**98.9**	**98.9**	**98.9**
Totals, Stillborn	**4,869**	**4,462**	**4,270**	**3,943**	**1.1**	**1.1**	**1.1**	**1.1**

[1] Unless otherwise indicated, includes only foetuses of 28 or more full weeks gestation. [2] Includes 22 stillbirths of 20-27 weeks gestation. [3] Includes 33 stillbirths of 20-27 weeks gestation. [4] Includes 17 stillbirths of 20-27 weeks gestation.

Fertility Rates.—The sex and age composition of a population is obviously an important factor in determining crude birth, marriage and death rates. Since almost all children born each year are to women between the ages of 15 and 45, variations in the proportion of women of these ages to the total population will cause variations in the crude birth rate of different countries—or of different regions within a country—even though the actual rates of reproduction or *fertility* of the women in these age groups in each country or region are identical.

A more accurate measure of the fertility of a population would be one based on the number of women of reproductive age, that is those 'able' to bear children, and a still more accurate measure would be one based on the number within this group that are married, that is those 'eligible', as it were, to bear children. Each type of rate has its uses, depending on the comparisons required. The two types are compared in Table **6**, and indicate the variations in each type as between provinces and the provincial trends over the years 1965-68.

The number of infants born in relation to every 1,000 women in the population between the ages of 15 and 45 has been declining for the past few years, dropping from 103.4 in 1965 to 83.0 in 1968. However, the rates varied among the provinces from 72.9 to 159.5 during the past four years; in 1968, Newfoundland, Prince Edward Island, Saskatchewan, Alberta, New Brunswick and Nova Scotia had the highest rates and Quebec, Ontario, British Columbia and Manitoba the lowest, in order of mention. On the other hand, the average annual number of infants born to every 1,000 *married* women in the country as a whole dropped from 148.4 to 118.8 during the same period. According to this measure, the four eastern provinces and Saskatchewan had, on the whole, the highest rates.

6.—Crude Fertility Rates, by Province, 1965-68

Province or Territory	Rates per 1,000 *Total* Women 15-44 Years of Age[1]				Rates per 1,000 *Married* Women 15-44 Years of Age[1]			
	1965	1966	1967	1968	1965	1966	1967	1968
Newfoundland	159.5	149.0	132.5	128.3	246.3	231.3	207.0	200.2
Prince Edward Island	129.7	112.1	102.4	102.7	200.8	174.9	161.8	163.8
Nova Scotia	113.0	103.7	96.4	91.5	162.2	148.4	138.9	133.3
New Brunswick	119.8	106.3	101.4	93.3	183.7	163.1	157.0	144.1
Quebec	97.5	86.6	78.1	72.9	156.9	139.2	124.6	115.8
Ontario	101.1	91.2	85.0	81.7	138.1	124.7	116.5	112.0
Manitoba	105.2	94.7	90.0	89.9	146.3	131.6	125.4	124.8
Saskatchewan	115.1	105.8	99.0	99.1	157.9	144.3	136.2	135.9
Alberta	111.1	102.4	100.2	95.2	144.9	134.3	131.5	125.2
British Columbia	94.7	87.5	84.0	82.4	122.8	113.0	108.8	106.9
Yukon Territory	152.9	125.4	128.3	123.3	..	144.5	..	..
Northwest Territories	233.5	210.2	224.1	220.0	..	269.3	..	..
Canada[2]	**103.4**	**93.4**	**86.7**	**83.0**	**148.4**	**133.9**	**124.4**	**118.8**

[1] Since the number of births to women over age 44 is quite small, rates are here restricted to women under 45.
[2] Excludes the Yukon and Northwest Territories.

The rates shown in Table 6 are *crude* in the sense that they do not take into account differences in fertility in the component age periods within the female reproductive life span, nor the proportions of married women in each age period. It is therefore conventional practice to calculate what are termed *age-specific fertility rates*, i.e., the number of infants born annually to every 1,000 women in *each* of the reproductive age periods, again either for all women or for those who are married. Table 7 provides these two sets of rates for 1941, 1951, 1956 and 1961-68.

Another measure of fertility in a country is obtainable from what is conventionally referred to as a *gross reproduction rate*. The gross reproduction rates shown in Table 7 indicate the average number of female children born each year to each woman living through the child-bearing ages. In other words, this figure represents the average number of females that *would* be born to each woman who lived to age 50 *if* the fertility rate of the given year remained unchanged during the whole of her child-bearing period. A gross reproduction rate of 1.000 indicates that, on the basis of current fertility and without making any allowance for mortality among mothers during their child-bearing years, the present generation of child-bearing women would exactly maintain itself. Canada has always had one of the highest gross reproduction rates among the industrialized countries of the world. Even during the period of low birth rates in the 1930s the rate varied between 1.300 and 1.500 and since World War II has ranged from 1.640 to a record high of 1.915 in 1959; in 1968 the rate stood at 1.184, still 18 p.c. more than the number required for the population to replace itself but down one third from that of five years ago. With minor exceptions, provincial reproduction rates are also well above the replacement level.

Table 7 indicates that in 1968, considering all women, whether married or not, women in their 20s were the most reproductive, as might be expected; on the average, for every 1,000 women between the ages of 20 and 25, 153 infants were born during that year or, expressed another way, about one woman out of six or seven in that age group gave birth to a live-born infant. This compares with a rate of 147 for women in the age group 25-29. However, among married women, teen-age mothers have consistently had the highest fertility, with almost two out of five bearing a child in 1968, while more than one out of every seven married women in their early 20s had a child, only slightly more than those in their late 20s.

7.—Age-Specific Fertility Rates per 1,000 Women, by Age Group, 1941-68

(Exclusive of Newfoundland for all years and the Yukon and Northwest Territories for 1941)

Year	Age Group							Gross Reproduction Rate
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
	Total Women							
1941	30.7	138.4	159.8	122.3	80.0	31.6	3.7	1.377
1951	48.1	188.7	198.8	144.5	86.5	30.9	3.1	1.701
1956	55.9	222.2	220.1	150.3	89.6	30.8	2.9	1.874
1961	58.2	233.6	219.2	144.9	81.1	28.5	2.4	1.868
1962	55.0	231.6	214.6	143.1	77.1	27.6	2.1	1.830
1963	53.1	226.0	210.6	140.3	75.8	25.9	2.1	1.788
1964	50.2	212.8	203.1	134.9	72.0	25.1	2.1	1.702
1965	49.3	188.6	181.9	119.4	65.9	22.0	2.0	1.529
1966	48.2	169.1	163.5	103.3	57.5	19.1	1.7	1.369
1967	45.2	161.1	151.4	91.4	50.6	15.9	1.5	1.261
1968	43.4	152.5	147.1	85.8	44.4	13.8	1.4	1.184
	Married Women							
1941	453.1	340.2	237.8	158.3	99.1	38.9	4.5	...
1951	498.5	350.4	248.1	168.7	100.6	36.6	3.7	...
1956	551.5	381.7	265.5	169.8	101.0	35.6	3.4	...
1961	541.2	374.4	255.6	161.4	89.9	32.1	2.8	...
1962	526.7	368.9	249.8	158.6	85.1	31.0	2.5	...
1963	512.7	362.2	244.9	154.8	83.4	29.0	2.4	...
1964	487.2	344.4	235.2	148.2	79.0	27.9	2.4	...
1965	481.9	307.4	209.7	130.6	71.9	24.3	2.3	...
1966	465.8	280.2	187.3	112.5	62.5	21.0	2.0	...
1967	409.7	271.8	174.0	99.3	54.5	17.3	1.6	...
1968	372.8	259.2	169.9	93.0	47.4	14.9	1.5	...

Age of Parents.—Age of parents is an important variable in any analysis of birth statistics. The distribution of legitimate and illegitimate live births by age of the parents is given in Table 8.

Almost 9 p.c. of the legitimate children born in 1968 were born to mothers under 20 years of age, in over two fifths of the births the mother was under 25 years, and in over two thirds, under 30 years; in over one fifth of the births the father was under 25 years of age, and in over one half of all births the father was under 30 years. On the other hand, over two fifths of the illegitimate infants were born to mothers under 20 years of age and an additional 37.5 p.c. to mothers under 25 years. The average age of all the married mothers to whom a child was born in 1968 was 27.1 and of the fathers 30.2 years; ten years ago the average ages of the parents were 28.2 and 31.5, and thirty years ago 28.9 and 33.3, respectively.

The median age of unmarried mothers who bore a live-born child in 1968 was 20.8; that is, half of the mothers of the 31,681 'illegitimate' children delivered in 1968 were under 20.8 years of age.

It should be kept in mind that the higher proportion of births occurring at younger ages in recent years does not necessarily mean that couples are having their children at a younger age. Two things should be noted: first, the decline in fertility in recent years has been greatest among older women and, consequently, births occurring at younger ages automatically form a greater proportion of total births than formerly, as well as produce a lower average age at birth; secondly, this effect is compounded by the growing proportion of women in early child-bearing ages where fertility is higher or, more accurately, has declined less than among older women.

8.—Live Births, by Age of Parents, 1968
(Exclusive of Newfoundland)

Age Group	Legitimate				Illegitimate	
	Fathers		Mothers		Mothers	
	No.	p.c.	No.	p.c.	No.	p.c.
Under 20 years	5,644	1.8	27,953	8.7	12,755	41.0
Under 15 years	—	—	*30*	--	*221*	*0.7*
15 years	—	—	*280*	*0.1*	*701*	*2.3*
16 "	*23*	--	*1,369*	*0.4*	*1,666*	*5.4*
17 "	*304*	*0.1*	*4,182*	*1.3*	*2,708*	*8.7*
18 "	*1,505*	*0.5*	*8,543*	*2.7*	*3,544*	*11.4*
19 "	*3,812*	*1.2*	*13,649*	*4.2*	*3,915*	*12.6*
20-24 "	70,031	21.9	111,269	34.8	11,665	37.5
25-29 "	103,371	32.4	94,355	29.5	3,741	12.0
30-34 "	69,676	21.8	50,433	15.8	1,681	5.4
35-39 "	41,467	13.0	26,600	8.3	930	3.0
40-44 "	19,565	6.1	8,391	2.6	302	1.0
45-49 "	6,746	2.1	751	0.2	22	0.1
50 years or over	2,635	0.8	3	--	—	—
Totals, Stated Ages	**319,135**	**100.0**	**319,755**	**100.0**	**31,096**	**100.0**
Ages not stated	674	...	54	...	585	...
Totals, All Ages	**319,809**	**100.0**	**319,809**	**100.0**	**31,681**	**100.0**
Average ages.....yrs.	30.2		27.1		22.8	
Median ages[1] ..... "	29.1		25.9		20.8	

[1] The ages above and below which half of the births occurred.

Order of Birth.—Table 9 shows the order of birth of all live-born infants in 1968 according to the age of the mother. As would be expected, 33,475, or over four fifths of the 40,708 infants born to mothers under 20 years of age, were the first live-born child, whereas almost 12 out of every 25 of the children born to mothers of 20-24 years were their second or later live-born child. In 1968, 251 infants were born to mothers who had not yet reached their 15th birthday.

9.—Order of Birth of Live-Born Children, by Age of Mother, 1968
(Exclusive of Newfoundland)

Order of Birth of Child	Age of Mother										Percentage of Total
	Under 15	15-19	20-24	25-29	30-34	35-39	40-44	45 or Over	Age Not Stated	All Ages	
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	
1st child	249	33,226	64,322	25,317	6,480	2,182	505	25	583	132,889	37.8
2nd "	2	6,330	40,053	32,527	10,910	3,451	691	34	13	94,011	26.7
3rd "	—	815	13,045	21,272	12,214	4,782	1,010	67	5	53,210	15.1
4th "	—	84	3,958	10,225	9,115	4,646	1,165	76	4	29,273	8.3
5th "	—	2	1,144	4,656	5,349	3,734	1,128	87	—	16,100	4.6
6th "	—	—	328	2,312	3,270	2,670	920	64	2	9,566	2.7
7th "	—	—	70	1,075	1,934	1,871	779	70	—	5,799	1.6
8th "	—	—	8	446	1,278	1,274	614	72	1	3,693	1.1
9th "	—	—	2	183	740	958	447	50	—	2,380	0.7
10th "	—	—	1	59	449	680	391	47	1	1,628	0.5
11th "	—	—	1	18	208	483	276	41	—	1,027	0.3
12th "	—	—	—	5	105	324	236	34	1	705	0.2
13th "	—	—	—	1	34	217	183	30	—	465	0.1
14th "	—	—	—	—	20	139	135	21	—	315	0.1
15th "	—	—	—	—	6	70	90	15	—	181	0.1
16th "	—	—	—	—	2	27	58	15	—	102	--
17th "	—	—	—	—	—	9	32	11	—	52	--
18th "	—	—	—	—	—	10	13	9	—	32	--
19th "	—	—	—	—	—	2	9	4	—	15	--
20th or over	—	—	—	—	—	1	11	4	—	16	--
Not stated	—	—	2	—	—	—	—	—	29	31	--
Totals	**251**	**40,457**	**122,934**	**98,096**	**52,114**	**27,530**	**8,693**	**776**	**639**	**351,490**	**100.0**

Table **10** summarizes the pattern of family formation since 1941 and shows that the percentages of first and second children have been increasing in recent years. As mentioned above for illegitimate births and average ages of parents, the decline in fertility and the recent evolution of the age structure of the female population affect the percentage distribution of births by parity. The increasing proportion of women in early child-bearing ages, where the majority of low-parity births occur, tends obviously to increase the proportion of these births. Also, as explained for illegitimate births, the decline in the number of high-parity births also contributes to the increase in the percentage of low-parity births since the latter are taken as a percentage of *total* births. These two factors more than offset a decline in recent years in the probability of having a first or a second child as compared with the early 1960s. For example, if the 1962 fertility rates for first and second births had prevailed in 1968, there would have been an extra 40,000 births; the corresponding rates for 1957 would have yielded 60,000 additional births. Thus, the postponement of births by recently married couples is one of the main factors in the decline in the annual number of births in recent years.

10.—Percentage Distribution of Legitimate Live Births, by Order of Birth, 1941-68

(Exclusive of Newfoundland)

Year	1st Child	2nd Child	3rd Child	4th and Later Children	Total
1941	32.7	21.8	13.5	32.0	100.0
1951	26.7	25.8	17.6	29.9	100.0
1959	24.8	24.0	18.2	32.9	100.0
1960	24.5	23.8	18.5	33.1	100.0
1961	24.1	23.6	18.5	33.8	100.0
1962	24.0	23.7	18.4	33.9	100.0
1963	24.3	23.6	18.5	33.6	100.0
1964	25.0	23.8	18.3	32.9	100.0
1965	27.1	24.3	17.6	31.0	100.0
1966	29.9	25.5	16.9	27.6	100.0
1967	32.6	26.5	16.3	24.6	100.0
1968	34.2	27.8	16.0	21.9	100.0

Birthweight.—Excluding Newfoundland, information on birthweight of newborn infants has recently become available from provincial records of birth. These data, in addition to their usefulness in calculating the average weights of newborn infants, are of importance from the public health and medical points of view in throwing light on the number of immaturely developed foetuses that are delivered alive. According to criteria recommended by the World Health Organization, infants of 5½ lb. or less at birth are considered 'immature' and hence exposed to a much greater risk of dying than those over this weight. Weight of the infant at birth depends on a host of maternal factors—biological, physiological, environmental, nutritional, etc.—information on which is not available from the birth records, but some information is available on the age of the mother and length of pregnancy before delivery.* Analysis of this information shows that (1) there are variations in average weight according to the age of the mother, (2) women under 20 and over 35 tend to produce higher proportions of immature infants, so that the late 20s and early 30s would appear to be the ideal ages for motherhood, and (3) almost all infants of less than 28 weeks gestation are delivered 'immature' according to the definition. The average single male infant born at full term weighs about 7½ lb. at birth and the average female about 4 oz. less.

* Obtainable from the Vital Statistics Section, DBS.

Stillbirths.*—The 3,926 stillbirths of at least 28 weeks gestation that were delivered in 1968 represented a ratio of 10.8 for every 1,000 foetuses born alive. As is evident from Table **11**, the stillbirth ratio has been decreasing steadily—except for a slight increase in 1967—and has been cut by more than half over the past quarter-century. Although the variations between provincial ratios have never been wide, ratios in some provinces have been reduced more than in others. The stillbirth ratio among unmarried mothers has been consistently higher than that among married mothers but the difference is narrowing.

11.—Stillbirths and Ratios per 1,000 Live Births, by Province, 1941-68

Year	Born to All Mothers													Born to Unmarried Mothers[1]	
	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada[2]	No.	P.C. of Total
	Numbers (28 weeks or more gestation)														
Av. 1941-45	191	50	388	295	2,786	1,988	345	348	327	309	1	6	6,845	355	5.20
" 1946-50	215	54	358	320	2,898	2,020	349	350	385	352	2	8	7,187	343	4.85
" 1951-55	222	52	337	291	2,705	2,017	336	313	425	374	6	11	7,088	316	4.60
" 1956-60	274	46	304	267	2,446	1,992	301	262	388	418	5	12	6,714	291	4.51
" 1961-65	261	47	256	220	1,727	1,818	278	242	358	370	5	19	5,600	327	6.12
1966.....	188	34	212	174	1,301	1,554	193	172	280	301	2	18	4,429	345	8.13
1967.....	183	24	203	169	1,232	1,419	205	189	286	311	5	22	4,248	372	9.15
1968.....	183	35	151	146	990	1,442	210	171	254	316	7	21	3,926	395	10.55
	Ratios													Ratio per 1,000 Illegitimate Live Births[1]	
Av. 1941-45	20.5	22.8	25.6	22.6	28.5	25.6	21.8	18.9	17.4	17.5	11.4	15.7	24.7	30.8	
" 1946-50	17.4	18.9	19.9	19.0	25.1	19.2	18.1	16.0	15.9	13.6	8.7	12.5	20.2	24.2	
" 1951-55	17.0	19.0	18.4	17.7	21.0	15.6	15.7	13.3	13.7	11.9	14.1	16.5	17.0	20.3	
" 1956-60	18.3	17.1	15.9	16.1	17.5	13.0	13.4	10.9	10.5	10.7	10.7	12.3	14.3	15.6	
" 1961-65	17.3	17.1	13.8	14.0	13.1	11.9	12.5	10.6	9.7	10.1	9.0	16.0	12.3	13.7	
1966.....	13.3	15.5	13.9	13.7	11.8	11.8	10.7	9.0	9.2	9.3	5.4	15.5	11.4	12.1	
1967.....	14.2	11.7	14.2	13.7	12.1	11.1	11.9	10.5	9.3	9.5	13.0	18.2	11.5	12.4	
1968.....	14.3	16.6	11.0	12.6	10.2	11.4	12.1	9.4	8.4	9.4	18.9	16.2	10.8	12.5	

[1] Exclusive of Newfoundland for all years and the Yukon and Northwest Territories for 1941-50. [2] Figures for Newfoundland are included from 1949.

Table **12** illustrates the fact that the risk of having a stillborn child increases with the age of the mother. Although stillbirth ratios for mothers of all ages have been declining, they continue to be three to four times as high for mothers over 40 years of age as for mothers under 30. The average age of mothers who bore stillborn children in 1968 was 28.7 years; the median age was 27.4. The average age of mothers who bore legitimate live-born children was 27.1 and of those who bore illegitimate live-born offspring was 22.8. Causes of stillbirths in 1968 are shown in Table **13**.

* Stillbirth figures given here refer only to foetuses of 28 or more weeks gestation which "showed no sign of life". Up to the end of 1963, only foetuses delivered after at least 28 weeks pregnancy which showed no sign of life were required to be registered with the provincial authorities; as of Jan. 1, 1964, all provinces (except Newfoundland) provide for the compulsory registration of all stillbirths of 20 or more weeks gestation, a 'stillbirth' being defined as "the complete expulsion or extraction from its mother, after at least 20 weeks pregnancy, of a product of conception in which, after such expulsion or extraction, there is no breathing, beating of the heart, pulsation of the umbilical cord, or unmistakable movement of voluntary muscle". Available data for stillbirths of 20-27 weeks pregnancy are not shown here but are obtainable from the Vital Statistics Section, DBS.

12.—Stillbirths and Ratios per 1,000 Live Births, by Age of Mother, 1968

(Exclusive of Newfoundland)

Age Group of Mother	Live Births	Stillbirths	Stillbirth Ratio per 1,000 Live Births
	No.	No.	No.
Under 20 years	40,708	367	9.0
20–24 "	122,934	1,018	8.3
25–29 "	98,096	894	9.1
30–34 "	52,114	634	12.2
35–39 "	27,530	534	19.4
40–44 "	8,693	249	28.6
45–49 "	773	34	44.0
50 years or over	3	—	—
Age not stated	639	13	...
Totals, All Ages	**351,490**	**3,743**	**10.6**
Average age of mothers....yrs.	26.7	28.7	...
Median age of mothers[1] "	25.5	27.4	...

[1] The age above and below which half of the stillbirths occurred.

13.—Stillbirths, by Cause, 1968

International List No.	Cause	Males	Females	Total
		No.	No.	No.
Y 30	Chronic disease in mother	63	68	131
Y 31	Acute disease in mother	16	11	27
Y 32	Diseases and conditions of pregnancy and childbirth	174	126	300
Y 33	Absorption of toxic substance from mother	2	—	2
Y 34	Difficulties in labour	78	68	146
Y 35	Other causes in mother	23	22	45
Y 36	Placental and cord conditions	877	737	1,614
Y 37	Birth injury	19	15	34
Y 38	Congenital malformation of foetus	180	296	476
Y 39	Diseases of foetus and ill-defined causes	595	556	1,151
	All Causes	**2,027**	**1,899**	**3,926**

Section 3.—Deaths*

No official crude† death rates are available prior to 1921, but some indication of these may be obtained from studies of the early censuses as follows:—

Intercensal Period	*Estimated Average Annual Crude Death Rate (per 1,000 Population)*
1851-61	22
1861-71	21
1871-81	19
1881-91	18
1891-1901	16
1901-11	13
1911-21	13

As is typical of pioneer populations, Canada had a high death rate in the mid-1850s when the country was still in the throes of pioneer settlement. The crude death rate during that period is estimated as between 22 and 25. Although no data are available, it

* For international comparisons, see Section 7, pp. 326-327.
† A crude rate is one based on the *total* population.

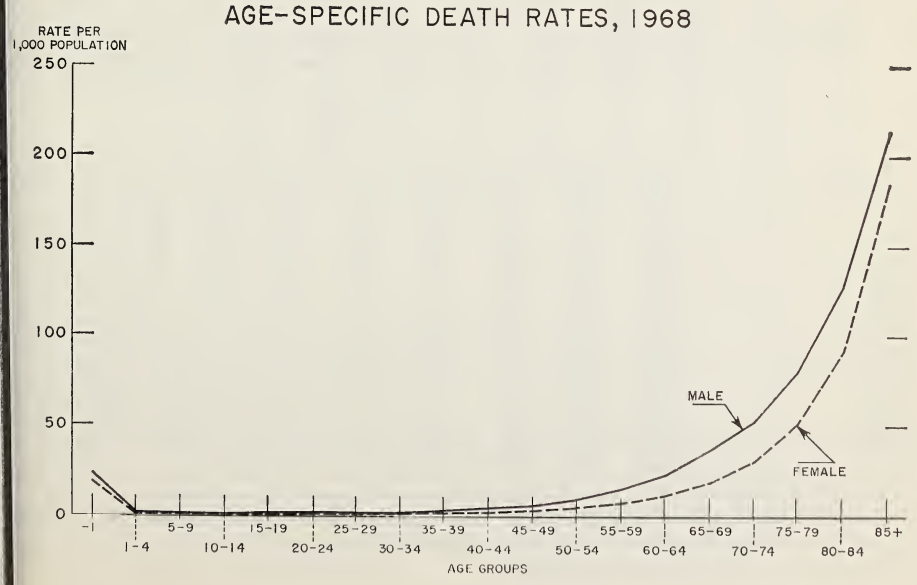
is assumed that, while mortality at all ages was high, the rate among infants, children and young adults must have been particularly high since even in the 1920s mortality in these ages was still quite high. With the gradual increase in population density and in urbanization and improved sanitation and medical services, the crude rate was halved during the 80 years between 1851 and 1930, dropping from about 22 to 11. It declined steadily to slightly over 8 in the late 1950s and dropped to a low of 7.4 in 1967 and 1968. This is one of the lowest crude death rates in the world.

Table 1, pp. 285-286, shows the trends in crude death rates since 1941 in the provinces and territories. The low rates shown for Newfoundland and Quebec are attributable mainly to the large proportions of young people in their populations and the relatively high rates for British Columbia to the high proportion of elderly people in that province.

Subsection 1.—General Mortality

Age and Sex Distribution of Deaths.—During the period of national vital statistics (1921 to date) the mortality pattern at all ages has been downward. Of major significance in lowering the over-all death rate were the reductions in infant mortality, in childhood death rates and in those of young adults.

Table 14 shows that, between 1941 and 1968, mortality rates among infants (under one year of age) dropped by nearly two thirds, and death rates for children 1-4 years of age by about four fifths. Rates for older children and young adults also declined steeply. Despite the reduction in infant mortality, more deaths still occur in the first year of life than in any other single year. As shown in Table 15, males under age 40 accounted for 29.5 p.c. of all male deaths in 1941 but for only 14.0 p.c. of such deaths in 1968; in 1941, 28.8 p.c. of all female deaths were of persons under age 40, a percentage that declined to 11.8 in 1968. Percentage reductions in the mortality of older males since 1941 were more moderate, and over the 55-69 range they were quite small; the corresponding reductions for older females, however, were very substantial in every age group up to 85.



The sharp declines in mortality in the age groups under 40 has tended to increase the population in the older groups and to raise the average age at death. Over the 1941-68 period, the average age at death among males rose from 51.5 to 62.9 and the average age for females increased still more markedly, from 53.4 to 67.1. Over the same period, the male median age at death rose 7.4 years, from 61.2 to 68.6 and the gain for females was 10.4 years, from 63.6 to 74.0. This means that half of the females dying during 1968 were more than 74 years old.

14.—Percentage Change in Death Rates for Each Age Group, 1941 to 1968

Age Group	Males	Females	Age Group	Males	Females
Under 1 year	−65.8	−64.2	45−49 years	−20.5	−48.3
1− 4 years	−78.7	−80.0	50−54 "	−14.2	−37.0
5− 9 "	−64.7	−69.2	55−59 "	− 5.0	−37.4
10−14 "	−64.3	−70.0	60−64 "	− 2.9	−36.8
15−19 "	−35.0	−66.7	65−69 "	− 0.8	−37.8
20−24 "	−30.8	−70.0	70−74 "	−10.8	−35.1
25−29 "	−44.4	−76.0	75−79 "	−16.2	−36.0
30−34 "	−42.9	−71.4	80−84 "	−14.2	−30.1
35−39 "	−42.1	−61.8	85 years or over	−11.8	−19.7
40−44 "	−30.0	−55.6	**All Ages**	**−20.4**	**−31.9**

15.—Distribution of Deaths by Age and Sex, 1941, 1951, 1961, 1966 and 1968

Age Group	1941[1]		1951		1961		1966		1968	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
	Numbers									
Under 1 year	8,788	6,448	8,375	6,298	7,447	5,493	5,138	3,822	4,293	3,290
1− 4 years	1,878	1,566	1,421	1,151	1,154	844	988	775	830	640
5− 9 "	888	670	711	466	672	405	669	480	689	436
10−14 "	787	536	461	284	527	278	620	318	552	325
15−19 "	1,118	823	721	457	840	322	1,212	467	1,269	492
20−24 "	1,332	1,039	1,009	549	969	342	1,324	403	1,463	482
25−29 "	1,317	1,173	988	660	895	418	980	384	994	443
30−34 "	1,211	1,148	1,070	778	1,041	562	1,054	564	1,048	521
35−39 "	1,497	1,242	1,281	1,015	1,422	880	1,456	845	1,460	827
40−44 "	1,744	1,464	1,756	1,266	1,916	1,099	2,146	1,293	2,230	1,292
45−49 "	2,416	1,817	2,463	1,607	2,993	1,617	3,111	1,823	3,306	1,803
50−54 "	3,355	2,227	3,525	2,083	4,242	2,237	4,855	2,434	4,643	2,583
55−59 "	4,394	2,851	4,741	2,832	5,494	2,749	6,352	3,115	6,655	3,340
60−64 "	5,288	3,483	6,465	3,902	7,028	3,725	7,911	4,064	8,199	4,151
65−69 "	6,057	4,412	8,007	5,119	8,545	5,304	9,226	5,393	9,840	5,461
70−74 "	6,495	4,981	8,748	6,439	10,582	7,058	10,549	7,063	10,500	7,231
75−79 "	6,421	5,461	8,254	6,904	10,970	8,290	11,102	8,695	11,337	8,821
80−84 "	5,020	4,906	6,232	6,130	8,635	7,871	10,006	9,048	10,413	9,451
85 years or over	3,846	4,540	5,336	6,319	7,337	8,782	9,214	10,964	9,813	12,041
Totals, All Ages	**63,852**	**59,787**	**71,564**	**54,259**	**82,709**	**58,276**	**87,913**	**61,950**	**89,534**	**63,661**

[1] Excludes the Yukon and Northwest Territories.

15.—Distribution of Deaths by Age and Sex, 1941, 1951, 1961, 1966 and 1968—concluded

Age Group	1941[1]		1951		1961		1966		1968	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
	Percentages									
Under 1 year	13.8	12.7	11.7	11.6	9.0	9.4	5.8	6.2	4.8	5.2
1— 4 years	2.9	3.1	2.0	2.1	1.4	1.4	1.1	1.3	0.9	1.0
5— 9 "	1.4	1.3	1.0	0.9	0.8	0.7	0.8	0.8	0.8	0.7
10—14 "	1.2	1.1	0.6	0.5	0.6	0.5	0.7	0.5	0.6	0.5
15—19 "	1.8	1.6	1.0	0.8	1.0	0.6	1.4	0.8	1.4	0.8
20—24 "	2.1	2.0	1.4	1.0	1.2	0.6	1.5	0.7	1.6	0.8
25—29 "	2.1	2.3	1.4	1.2	1.1	0.7	1.1	0.6	1.1	0.7
30—34 "	1.9	2.3	1.5	1.4	1.3	1.0	1.2	0.9	1.2	0.8
35—39 "	2.3	2.4	1.8	1.9	1.7	1.5	1.7	1.4	1.6	1.3
40—44 "	2.7	2.9	2.5	2.3	2.3	1.9	2.4	2.1	2.5	2.0
45—49 "	3.8	3.6	3.4	3.0	3.6	2.8	3.5	2.9	3.7	2.8
50—54 "	5.3	4.4	4.9	3.8	5.1	3.8	5.5	3.9	5.2	4.1
55—59 "	6.9	5.6	6.6	5.2	6.6	4.7	7.2	5.0	7.4	5.3
60—64 "	8.3	6.9	9.0	7.2	8.5	6.4	9.0	6.6	9.2	6.5
65—69 "	9.5	8.7	11.2	9.4	10.3	9.1	10.5	8.7	11.0	8.6
70—74 "	10.2	9.8	12.2	11.9	12.8	12.1	12.0	11.4	11.7	11.4
75—79 "	10.1	10.7	11.5	12.7	13.3	14.2	12.6	14.0	12.7	13.9
80—84 "	7.9	9.7	8.7	11.3	10.4	13.5	11.4	14.6	11.6	14.8
85 years or over	6.0	8.9	7.5	11.6	8.9	15.1	10.5	17.7	11.0	18.9
Totals, All Ages	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
	Rates per 1,000 Population									
Under 1 year	67.0	51.9	42.7	34.0	30.5	23.7	25.8	20.2	22.9	18.6
1— 4 years	4.7	4.0	2.1	1.8	1.3	1.0	1.1	0.9	1.0	0.8
5— 9 "	1.7	1.3	1.0	0.7	0.6	0.4	0.6	0.4	0.6	0.4
10—14 "	1.4	1.0	0.8	0.5	0.6	0.3	0.6	0.3	0.5	0.3
15—19 "	2.0	1.5	1.4	0.9	1.2	0.5	1.3	0.5	1.3	0.5
20—24 "	2.6	2.0	1.9	1.0	1.7	0.6	1.8	0.5	1.8	0.6
25—29 "	2.7	2.5	1.8	1.1	1.5	0.7	1.6	0.6	1.5	0.6
30—34 "	2.8	2.8	2.1	1.5	1.6	0.9	1.7	0.9	1.6	0.8
35—39 "	3.8	3.4	2.5	2.0	2.3	1.4	2.2	1.3	2.2	1.3
40—44 "	5.0	4.5	3.9	3.0	3.4	2.0	3.4	2.0	3.5	2.0
45—49 "	7.3	6.0	6.4	4.5	5.8	3.2	5.7	3.3	5.8	3.1
50—54 "	10.6	8.1	10.4	6.5	9.6	5.3	9.7	5.0	9.1	5.1
55—59 "	16.0	12.3	16.2	10.2	15.2	8.0	15.4	7.7	15.2	7.7
60—64 "	24.2	18.5	24.5	16.1	24.0	12.8	24.0	12.2	23.5	11.7
65—69 "	37.3	30.4	35.1	24.9	35.7	21.4	36.2	19.5	37.0	18.9
70—74 "	58.5	47.0	54.5	41.6	54.0	34.2	53.1	30.9	52.2	30.5
75—79 "	95.7	79.7	87.6	73.3	81.8	59.2	79.9	53.9	80.2	51.0
80—84 "	147.6	131.2	135.5	120.7	125.1	101.2	124.0	93.6	126.7	91.7
85 years or over	241.9	229.3	235.1	212.0	208.9	192.2	213.4	183.4	213.3	184.2
Totals, All Ages	**10.8**	**9.1**	**10.1**	**7.8**	**9.0**	**6.5**	**8.7**	**6.2**	**8.6**	**6.2**
Average age at death yrs.	51.5	53.4	56.3	58.7	59.7	63.1	62.0	65.9	62.9	67.1
Median age at death[2] "	61.2	63.6	65.5	68.8	67.9	72.2	68.4	73.5	68.6	74.0

[1] Excludes the Yukon and Northwest Territories.

[2] The age above and below which half of the total number of annual deaths occurred.

Table 16 illustrates the variations from province to province in average and median ages at death; these, in turn, are dependent in large measure on the age distribution of the population as well as on varying mortality rates at each age. For example, in Newfoundland a high mortality rate among infants and young children reduces the average and median age for that province, but the reverse is the case in British Columbia and several other provinces with older populations.

16.—Average and Median Ages at Death, by Sex and Province, 1968

Province or Territory	Average Age at Death		Median Age at Death[1]	
	Males	Females	Males	Females
	yrs.	yrs.	yrs.	yrs.
Newfoundland	58.4	61.8	67.4	72.3
Prince Edward Island	63.2	69.6	70.3	75.1
Nova Scotia	64.4	68.7	70.4	75.6
New Brunswick	63.2	67.8	69.4	75.5
Quebec	60.4	64.7	66.1	71.7
Ontario	63.5	68.7	68.5	74.8
Manitoba	65.1	69.0	71.7	75.6
Saskatchewan	65.1	66.7	72.7	75.4
Alberta	62.9	64.2	70.1	72.6
British Columbia	65.5	68.7	71.5	75.7
Yukon Territory	49.9	40.2	...	...
Northwest Territories	25.2	31.2	...	...
Canada	**62.9**	**67.1**	**68.6**	**74.0**

[1] The age above and below which half of the total number of annual deaths occurred.

Deaths in Urban Centres.—Table 2, pp. 287-290, shows the numbers of deaths in urban centres of 20,000 population or over in 1968 and the average numbers for the period 1961-65; death rates for urban centres cannot be computed for these years since their populations are not known for intercensal years.

Causes of Death.—Table 17 summarizes the most recent figures for deaths and death rates in Canada grouped according to the International Abbreviated List of 50 Causes. Over 80 p.c. of the deaths are caused by diseases of the heart and arteries, cancer, accidents, diseases of early infancy, the respiratory diseases, and nephritis. Because of the rise in the average age at death during the past thirty years, the proportion of deaths from causes that affect older people has increased. Cancer and diseases of the cardiovascular-renal system now account for a larger proportion of all deaths than formerly. By the same token, deaths from causes that affect mainly children and young adults have declined.

17.—Deaths and Rates per 100,000 Population, according to the International Abbreviated List of 50 Causes, 1967 and 1968

International List No.		Cause of Death	Numbers of Deaths		Rates per 100,000 Population	
Abbreviated List	Detailed List		1967	1968	1967	1968
B 1	001–008	Tuberculosis of respiratory system	611	564	3.0	2.7
B 2	010–019	Tuberculosis, other forms	47	66	0.2	0.3
B 3	020–029	Syphilis and its sequelæ	68	78	0.3	0.4
B 4	040	Typhoid fever	1	2	--	--
B 5	043	Cholera	—	—	—	—
B 6	045–048	Dysentery, all forms	5	5	--	--
B 7	050, 051	Scarlet fever and streptococcal sore throat	4	5	--	--
B 8	055	Diphtheria	—	6	—	—
B 9	056	Whooping cough	15	15	0.1	0.1
B10	057	Meningococcal infections	38	24	0.2	0.1
B11	058	Plague	—	—	—	—
B12	080	Acute poliomyelitis	—	—	—	—

17.—Deaths and Rates per 100,000 Population, according to the International Abbreviated List of 50 Causes, 1967 and 1968—concluded

International List No.		Cause of Death	Numbers of Deaths		Rates per 100,000 Population	
Abbreviated List	Detailed List		1967	1968	1967	1968
B13	084	Smallpox	—	—	—	—
B14	085	Measles	45	19	0.2	0.1
B15	100–108	Typhus and other rickettsial diseases	—	—	—	—
B16	110–117	Malaria	—	1	—	--
B17	030–039, 041, 042, 044, 049, 052–054, 059–074, 081–083, 086–096, 120–138	All other diseases classified as infective and parasitic	297	323	1.5	1.6
B18	140–205	Cancer (all malignant neoplasms)	28,007	28,615	137.3	137.9
		Cancer	*26,449*	*27,055*	*129.6*	*130.4*
	(201)	Hodgkin's disease	*345*	*311*	*1.7*	*1.5*
	(204)	Leukæmia and aleukæmia	*1,213*	*1,249*	*5.9*	*6.0*
B19	210–239	Benign and unspecified neoplasms	317	341	1.6	1.6
B20	260	Diabetes mellitus	2,688	2,897	13.2	14.0
B21	290–293	Anæmias	354	369	1.7	1.8
B22	330–334	Vascular lesions affecting central nervous system	15,449	15,525	75.7	74.8
B23	340	Non-meningococcal meningitis	150	146	0.7	0.7
B24	400–402	Rheumatic fever	27	30	0.1	0.1
B25	410–416	Chronic rheumatic heart disease	1,277	1,225	6.3	5.9
B26	420–422	Arteriosclerotic and degenerative heart disease	48,548	49,411	237.9	238.2
B27	430–434	Other diseases of heart	2,286	2,376	11.2	11.5
B28	440–443	Hypertension with heart disease	2,187	2,094	10.7	10.1
B29	444–447	Hypertension without mention of heart	654	728	3.2	3.5
B30	480–483	Influenza	263	785	1.3	3.8
B31	490–493	Pneumonia	4,952	5,433	24.3	26.2
B32	500–502	Bronchitis	1,319	1,598	6.5	7.7
B33	540, 541	Ulcer of stomach and duodenum	942	900	4.6	4.3
B34	550–553	Appendicitis	112	118	0.5	0.6
B35	560, 561, 570	Intestinal obstruction and hernia	904	924	4.4	4.5
B36	543, 571, 572	Gastritis, duodenitis, enteritis and colitis except diarrhœa of the newborn	721	654	3.5	3.2
B37	581	Cirrhosis of liver	1,460	1,517	7.2	7.3
B38	590–594	Nephritis and nephrosis	1,032	921	5.1	4.4
B39	610	Hyperplasia of prostate	410	332	4.0[1]	3.2[1]
B40	640–652, 660, 670–689	Complications of pregnancy, childbirth and the puerperium	88	99	23.7[2]	27.2[2]
B41	750–759	Congenital malformations	2,128	2,018	10.4	9.7
B42	760–762	Birth injuries, postnatal asphyxia and atelectasis	1,665	1,656	8.2	8.0
B43	763–768	Infections of the newborn	307	247	1.5	1.2
B44	769–776	Other diseases peculiar to early infancy and immaturity (unqualified)	2,759	2,577	13.5	12.4
B45	780–795	Senility without mention of psychosis, ill-defined and unknown causes	977	1,026	4.8	4.9
B46	Residual	All other diseases	13,408	13,671	65.7	65.9
BE47	E810–E835	Motor vehicle accidents	5,522	5,488	27.1	26.5
BE48	E800–E802, E840–E962	All other accidents	6,074	6,005	29.8	28.9
BE49	E963, E970–E979	Suicide	1,841	2,021	9.0	9.7
BE50	E964, E965, E980–E999	Homicide and operations of war	324	341	1.6	1.6
		Totals, All Causes	**150,283**	**153,196**	**736.5**	**738.5**

[1] Per 100,000 males. [2] Per 100,000 live births.

Table 18 shows clearly that accidents are, by far, the leading cause of death among males from age one to 44 and one of the five major causes above that age. Although less predominant among females, accidents are also one of the leading causes of female death beyond the first year of life.

18.—Leading Causes of Death, by Sex at Various Age Groups, 1968

(Rates per 100,000 population)

Cause	Males		Cause	Females		Cause	Both Sexes	
	No.	Rate		No.	Rate		No.	Rate
Under 1 Year[1]								
Congenital malformations	761	405.9	Congenital malformations	676	382.3	Congenital malformations	1,437	394.4
Immaturity	757	403.8	Immaturity	571	322.9	Immaturity	1,328	364.5
Postnatal asphyxia and atelectasis	498	265.6	Influenza, bronchitis, pneumonia	379	214.3	Influenza, bronchitis, pneumonia	859	235.8
Injury at birth	481	256.5	Postnatal asphyxia and atelectasis	354	200.2	Postnatal asphyxia and atelectasis	852	233.9
Influenza, bronchitis, pneumonia	480	256.0	Injury at birth	323	182.7	Injury at birth	804	220.7
1—4 Years								
Accidents	370	43.3	Accidents	241	29.7	Accidents	611	36.7
Cancer	93	10.9	Congenital malformations	103	12.7	Congenital malformations	194	11.6
Congenital malformations	91	10.7	Influenza, bronchitis, pneumonia	76	9.4	Cancer	162	9.7
Influenza, bronchitis, pneumonia	83	9.7	Cancer	69	8.5	Influenza, bronchitis, pneumonia	159	9.5
Gastritis, duodenitis, enteritis, colitis	24	2.8	Gastritis, duodenitis, enteritis, colitis	9	1.1	Gastritis, duodenitis, enteritis, colitis	33	2.0
5—19 Years								
Accidents	1,663	50.1	Accidents	644	20.2	Accidents	2,307	35.5
Cancer	241	7.3	Cancer	185	5.8	Cancer	426	6.6
Congenital malformations	92	2.8	Congenital malformations	76	2.4	Congenital malformations	168	2.6
Suicide	92	2.8	Influenza, bronchitis, pneumonia	55	1.7	Influenza, bronchitis, pneumonia	119	1.8
Influenza, bronchitis, pneumonia	64	1.9	Cardiovascular diseases	30	0.9	Suicide	108	1.7
20—44 Years								
Accidents	3,001	87.1	Cancer	1,042	30.6	Accidents	3,686	53.8
Cardiovascular diseases	1,433	41.6	Accidents	685	20.1	Cardiovascular diseases	2,014	29.4
Cancer	870	25.2	Cardiovascular diseases	581	17.0	Cancer	1,912	27.9
Suicide	667	19.4	Suicide	272	8.0	Suicide	939	13.7
Cirrhosis of liver	148	4.3	Influenza, bronchitis, pneumonia	112	3.3	Influenza, bronchitis, pneumonia	241	3.5

45–64 Years

Cardiovascular diseases	11,777	630.5	Cancer	4,611	245.1	Cardiovascular diseases	15,935	425.0
Cancer	5,109	273.5	Cardiovascular diseases	4,158	221.0	Cancer	9,720	259.2
Accidents	1,638	87.7	Accidents	578	30.7	Accidents	2,216	59.1
Influenza, bronchitis, pneumonia	687	36.8	Diabetes mellitus	316	16.8	Influenza, bronchitis, pneumonia	987	26.3
Suicide	544	29.1	Influenza, bronchitis, pneumonia	300	15.9	Cirrhosis of liver	788	21.0

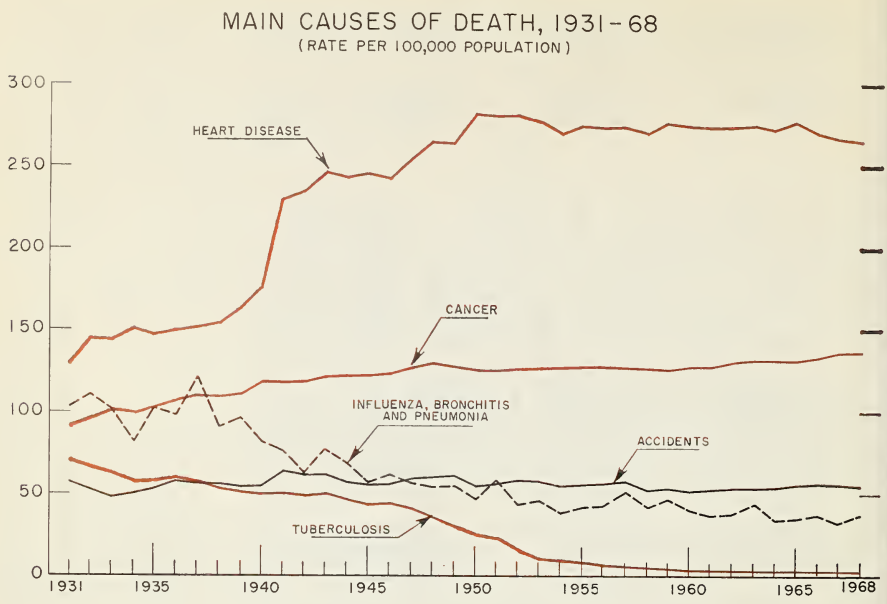
65 Years or Over

Cardiovascular diseases	31,047	4,216.6	Cardiovascular diseases	27,471	3,163.4	Cardiovascular diseases	58,518	3,646.7
Cancer	9,495	1,289.6	Cancer	6,875	791.7	Cancer	16,370	1,020.1
Influenza, bronchitis, pneumonia	3,349	454.8	Influenza, bronchitis, pneumonia	2,290	263.7	Influenza, bronchitis, pneumonia	5,639	351.4
Accidents	1,265	171.8	Diabetes mellitus	1,218	140.3	Accidents	2,296	143.1
Diabetes mellitus	890	120.9	Accidents	1,031	118.7	Diabetes mellitus	2,108	131.4

All Ages

Cardiovascular diseases	44,325	425.8	Cardiovascular diseases	32,257	312.1	Cardiovascular diseases	76,582	369.2
Cancer	15,820	152.0	Cancer	12,795	123.8	Cancer	28,615	137.9
Accidents	8,148	78.3	Accidents	3,345	32.4	Accidents	11,493	55.4
Influenza, bronchitis, pneumonia	4,689	45.0	Influenza, bronchitis, pneumonia	3,127	30.3	Influenza, bronchitis, pneumonia	7,816	37.7
Diseases of early infancy	2,596	24.9	Diseases of early infancy	1,884	18.2	Diseases of early infancy	4,480	21.6

[1] Per 100,000 live births.



Subsection 2.—Infant Mortality

Table **1**, pp. 285-286, and Table **19** show the striking improvement that has taken place in the mortality rates among infants (under one year of age) during the past 28 years. Although 57,995 of the 2,460,191 children born in the six years 1963-68 died before reaching their first birthday, 173,017 others lived who *would have died* at the infant mortality rate prevailing in the period 1926-30. This improvement is attributable to many factors—the higher proportion of births taking place in hospital or under proper prenatal and postnatal care, better supervision of water supplies, improved sanitation, pasteurization of milk, the use of antibiotics, improved home environment as a result of higher living standards and, in recent years, the generally lower age of mothers.

The variations that exist in infant mortality rates from province to province and from one locality to another may be explained by differences in the extent to which these factors apply provincially or locally. Among the provinces, the 1968 male infant mortality rates ranged from a low of 21.0 to a high of 38.8, compared with the national average of 22.9—the latter including the high rate among the Northwest Territories aboriginal population. Female rates ranged from 13.7 to 22.4, compared with the national rate of 18.6. Although the national and provincial rates for both sexes had been declining steadily for some years, for some unknown reason there were some reversals in provincial rates during 1968.

Table **19** shows that mortality among male infants is roughly 25 p.c. higher than that among female infants for Canada, with wider variations for the individual provinces. For the country as a whole, out of every 1,000 infant boys born alive in 1968, 23 died before reaching their first birthday, whereas out of every 1,000 infant girls born alive, 19 died within one year. As already pointed out, there are on the average 1,056 males born to every 1,000 females but, because male infant mortality is higher, the excess of males is reduced greatly by the end of the first year. For example, in 1963-68 there were 1,262,898 male children born compared with 1,197,293 female children, an excess of 65,605 or 5.5 p.c. in the same period, 33,204 male children died during their first year compared with 24,791 female children so that the excess of males at one year of age was reduced to 57,192 or 4.9 p.c.

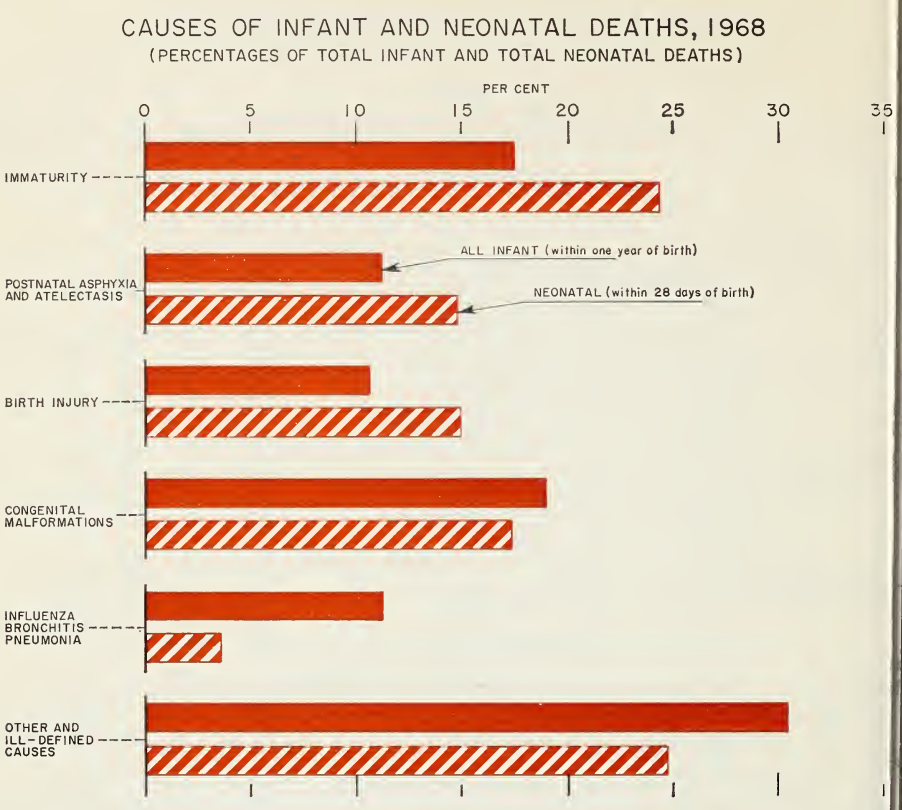
19.—Distribution of Infant Deaths by Province and Sex, 1941-68

Province and Year	Males	Females	Rate per 1,000 Male Live Births	Rate per 1,000 Female Live Births	Province or Territory and Year	Males	Females	Rate per 1,000 Male Live Births	Rate per 1,000 Female Live Births
	No.	No.				No.	No.		
Newfoundland.....1951	361	276	60.3	48.0	Manitoba—concl...1966	231	152	25.1	17.3
1961	335	253	41.7	33.5	1967	211	160	24.0	19.0
1966	237	158	32.8	23.0	1968	215	148	23.8	17.6
1967	214	153	33.0	24.1					
1968	184	125	28.2	19.8	Saskatchewan.....1941	531	415	56.1	46.2
P. E. Island.....1941	102	61	94.6	62.8	1951	353	323	31.8	30.4
1951	60	30	43.7	23.5	1961	373	245	30.3	21.0
1961	55	38	37.4	27.8	1966	278	183	28.3	19.9
1966	34	23	29.9	21.7	1967	267	198	28.9	22.6
1967	29	19	27.3	19.3	1968	271	197	28.9	22.4
1968	42	14	38.8	13.7	Alberta.....1941	506	373	57.0	44.3
Nova Scotia.....1941	545	363	77.0	53.2	1951	531	358	38.6	27.0
1951	344	250	38.9	30.2	1961	612	432	30.8	22.7
1961	309	229	31.0	24.3	1966	376	264	24.2	17.6
1966	221	163	28.1	22.1	1967	329	286	21.0	19.1
1967	187	139	25.5	19.9	1968	342	265	21.9	18.3
1968	159	137	22.3	20.6	British Columbia..1941	316	236	41.1	32.1
New Brunswick.....1941	515	421	83.1	69.3	1951	487	352	33.8	25.8
1951	472	363	57.6	46.0	1961	534	411	27.1	21.8
1961	248	186	29.1	23.0	1966	440	339	26.5	21.4
1966	163	143	24.9	23.2	1967	398	305	23.6	19.0
1967	172	138	27.3	22.8	1968	364	297	21.1	18.0
1968	124	111	21.0	19.5	Yukon Territory...1951	10	9	57.8	53.3
Quebec.....1941	3,916	2,854	85.3	65.9	1961	13	10	45.8	36.5
1951	3,335	2,486	53.7	42.3	1966	9	11	48.6	59.8
1961	2,464	1,855	34.7	28.0	1967	4	5	20.1	26.9
1966	1,565	1,211	27.7	22.7	1968	6	5	33.3	26.3
1967	1,303	1,044	25.2	21.0	Northwest				
1968	1,180	917	23.6	19.6	Territories.....1951	43	27	135.6	81.3
					1961	73	51	128.1	93.2
Ontario.....1941	1,910	1,384	51.3	39.5	1966	44	46	73.8	81.9
1951	2,010	1,535	33.9	27.6	1967	42	33	67.3	56.3
1961	2,090	1,536	25.9	20.0	1968	44	40	67.3	62.1
1966	1,540	1,129	22.8	17.5					
1967	1,446	1,069	22.1	17.3	**Canada**.....**1941**[1]	8,788	6,418	67.0	51.9
1968	1,362	1,034	21.0	16.8	**1951**	8,375	6,298	42.7	34.0
					1961	7,447	5,493	30.5	23.7
Manitoba.....1941	447	341	58.7	47.4	**1966**	5,138	3,822	25.8	20.2
1951	369	289	35.6	30.2	**1967**	4,602	3,549	24.2	19.6
1961	341	247	28.6	21.7	**1968**	4,293	3,290	22.9	18.6

[1] Excludes Newfoundland and the Yukon and Northwest Territories.

Infant Mortality in Urban Centres.—Because of the relatively small numbers of infant deaths in individual cities and towns, the rates for these centres usually vary widely from year to year. As is evident from Table 2, pp. 287-290, many cities and towns have maintained consistently low rates as compared with the national rate or the rate for the province in which they are situated, while others have consistently higher rates.

Causes of Infant Deaths.—In 1968 almost 69 p.c. of the infant deaths were caused by immaturity, congenital malformations, pneumonia, postnatal asphyxia and atelectasis, and injury at birth. Immaturity was the underlying cause of 1,328 deaths and an added complication in 2,041 others. Congenital malformations accounted for 1,437 fatalities, pneumonia for 778, postnatal asphyxia and atelectasis for 852 and injury at birth for 804. Rates for all of these causes (except injury at birth) decreased in 1968.



20.—Infant Mortality and Rates per 100,000 Live Births, by Cause, 1966-68

International List No.	Cause of Death	Numbers of Deaths			Rates per 100,000 Live Births		
		1966	1967	1968	1966	1967	1968
001-019	Tuberculosis	3	3	1	1	1	--
020-029	Syphilis	—	—	—	—	—	—
045-048	Dysentery	3	1	1	1	--	--
050	Scarlet fever	—	—	—	—	—	—
056	Whooping cough	5	11	10	1	3	
057	Meningococcal infections	14	10	9	4	3	
085	Measles	20	10	4	5	3	
140-239	Neoplasms	32	28	30	8	8	
273	Diseases of thymus gland	18	15	6	5	4	
325	Mental deficiency	37	35	39	10	9	1
340	Meningitis (non-meningococcal)	65	57	51	17	15	1
391, 392	Otitis media	53	42	25	14	11	
470-475	Acute upper respiratory infections	28	48	23	7	13	
480-483	Influenza	45	24	35	12	6	1
490-493	Pneumonia (4 weeks and over)	707	628	590	182	169	16
500-502	Bronchitis	56	33	46	14	9	1
543	Gastritis and duodenitis	1	3	1	--	1	--
560-570	Hernia and intestinal obstruction	93	83	84	24	22	2
571	Gastro-enteritis and colitis	170	154	97	44	42	2
572	Chronic enteritis, and ulcerative colitis	3	3	1	1	1	--
750-759	Congenital malformations	1,725	1,496	1,437	445	403	39

20.—Infant Mortality and Rates per 100,000 Live Births, by Cause, 1966-68—concluded

International List No.	Cause of Death	Numbers of Deaths			Rates per 100,000 Live Births		
		1966	1967	1968	1966	1967	1968
760, 761	Injury at birth	893	769	804	230	207	221
762	Postnatal asphyxia and atelectasis	966	896	852	249	242	234
763	Pneumonia of newborn (under 4 weeks)	243	246	188	63	66	52
764	Diarrhœa of newborn (under 4 weeks)	25	18	18	6	5	5
765-768	Other infections of newborn	51	43	41	13	12	11
769	Antenatal toxæmia	45	45	45	12	12	12
770	Erythroblastosis	202	149	169	52	40	46
771	Hæmorrhagic disease of newborn	66	61	69	17	16	19
772	Nutritional maladjustment	14	18	11	4	5	3
773	Ill-defined diseases peculiar to early infancy	995	1,034	954	257	279	262
774-776	Immaturity	1,642	1,452	1,328	424	391	365
795	Ill-defined and unknown causes	6	—	—	2	—	—
E810-E825	Motor vehicle accidents	26	23	21	7	6	6
E900-E904	Accidental falls	19	19	15	5	5	4
E916	Accidents caused by fire	18	16	19	5	4	5
E921, E922	Inhalation and ingestion of food or other object.	241	234	183	62	63	50
E924, E925	Accidental mechanical suffocation	97	125	106	25	34	29
	Other accidental and violent deaths	49	38	43	13	10	12
	Other specified causes	284	281	227	73	76	62
	Totals, All Causes	**8,960**	**8,151**	**7,583**	**2,311**	**2,198**	**2,081**

Age at Death.—Of the 7,583 infants who died within a year of their birth, 5,376, or lmost 71 p.c., were less than one month old—3,132 died during the first day of life, 1,669 rom the second to the seventh day, and 575 during the three following weeks.

21.—Infant Deaths, by Age, 1968

Time of Death	Number	Percentage	Cumulative		Time of Death	Number	Percentage	Cumulative	
			Number	Percentage				Number	Percentage
st day	3,132	41.3	3,132	41.3	1st month	5,376	70.9	5,376	70.9
nd "	732	9.7	3,864	51.0	2nd "	481	6.3	5,857	77.2
rd "	404	5.3	4,268	56.3	3rd "	463	6.1	6,320	83.3
th "	215	2.8	4,483	59.1	4th "	322	4.2	6,642	87.6
th "	144	1.9	4,627	61.0	5th "	235	3.1	6,877	90.7
th "	104	1.4	4,731	62.4	6th "	181	2.4	7,058	93.1
th "	70	0.9	4,801	63.3	7th "	135	1.8	7,193	94.9
					8th "	101	1.3	7,294	96.2
st week	4,801	63.3	4,801	63.3	9th "	92	1.2	7,386	97.4
nd "	270	3.6	5,071	66.9	10th "	63	0.8	7,449	98.2
rd "	170	2.2	5,241	69.1	11th "	64	0.8	7,513	99.1
th "	135	1.8	5,376	70.9	12th "	70	0.9	7,583	100.0

Neonatal Mortality.—Deaths occurring within the first four weeks following birth are onventionally referred to as 'neonatal' deaths. Table **21** shows that about 71 p.c. of all nfant deaths occurred in this hazardous neonatal period during 1968 and, as would be xpected, were caused mainly by conditions associated with pregnancy or delivery. Table **2** gives numbers and rates of neonatal deaths for 1941-68 and the chart on p. 310 compares he major causes of such deaths in 1968 with all infant deaths from the same causes. Although neonatal death rates have been declining since 1941, there has been less reduction uring the past five to 10 years and in fact slight increases in some provinces during the ast two or three years.

22.—Neonatal Mortality,[1] by Province, 1941-68

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	Numbers												
Av. 1941-45....	344	58	418	453	3,329	2,061	425	469	463	400	..	..	8,076
" 1946-50....	346	52	403	527	3,395	2,511	442	505	553	533	..	..	9,052
" 1951-55....	294	45	342	391	3,241	2,476	395	426	552	535	8	30	8,736
" 1956-60....	324	54	334	322	3,137	2,652	402	414	622	648	8	54	8,970
" 1961-65....	299	48	318	261	2,679	2,494	356	389	632	559	10	39	8,085
1966.....	252	42	256	191	2,013	1,956	249	309	435	506	9	35	6,253
1967.....	235	40	231	205	1,665	1,789	231	309	412	475	5	31	5,628
1968.....	177	40	193	154	1,511	1,832	228	314	436	443	8	40	5,376
	Rates per 1,000 Live Births												
Av. 1941-45....	37.0	26.5	27.6	34.7	34.0	26.5	26.8	25.4	24.6	22.6	..	..	29.2
" 1946-50....	28.0	18.2	22.4	31.2	29.4	23.9	22.9	23.1	22.8	20.6	..	..	25.5
" 1951-55....	22.4	16.5	18.7	23.7	25.2	19.2	18.5	18.1	17.8	17.1	19.9	45.0	21.0
" 1956-60....	21.7	20.1	17.5	19.4	22.4	17.4	18.0	17.2	16.8	16.6	15.5	57.1	19.1
" 1961-65....	19.8	17.2	17.2	16.7	20.4	16.3	16.1	17.1	17.1	15.2	20.4	33.4	17.7
1966.....	17.9	19.1	16.8	15.0	18.3	14.8	13.8	16.2	14.2	15.6	24.4	30.2	16.1
1967.....	18.3	19.5	16.1	16.6	16.4	14.0	13.4	17.2	13.4	14.4	13.0	25.6	15.2
1968.....	13.8	19.0	14.0	13.3	15.6	14.5	13.1	17.3	14.5	13.2	21.6	30.8	14.8

[1] Prior to 1951, includes deaths under one calendar month of age; since 1951, includes deaths under 28 days.

Perinatal Mortality.—'Perinatal' mortality—the combined total of stillbirths and deaths of live-born infants occurring 'around' the natal period—is a relatively new vital statistics concept. Since such deaths frequently have the same underlying causes, associated with pregnancy or delivery, regardless of whether they occur before or after delivery, perinatal deaths are generally considered as including the combined total of stillbirths occurring after at least 28 weeks pregnancy and deaths of live-born infants who fail to survive the first week of life.

In 1968 there were 8,727 such 'deaths', of which 3,926 were stillborn and 4,801 live-born but failed to survive one week, with a national rate of 23.7 such deaths for every 1,000 total deliveries. This perinatal rate has declined slowly but steadily from 65.2 in 1921 to 23.7 in 1968.

Subsection 3.—Maternal Mortality

As indicated in Table **1**, pp. 285-286, the number of mothers who die as the result of pregnancy or childbirth has been greatly reduced during the past two decades. The number stood at 99 in 1968 as compared with 135 in 1966 and 1965; the all-time low (88) was reached in 1967. Since 1951 the rate of maternal mortality per 10,000 births has been under 10

nce 1959 it has been under five. With this improvement, Canada's maternal death rate 2.7 in 1968) compares more favourably with those of other countries (see p. 327). Mortality mong unmarried mothers is higher than among married mothers.

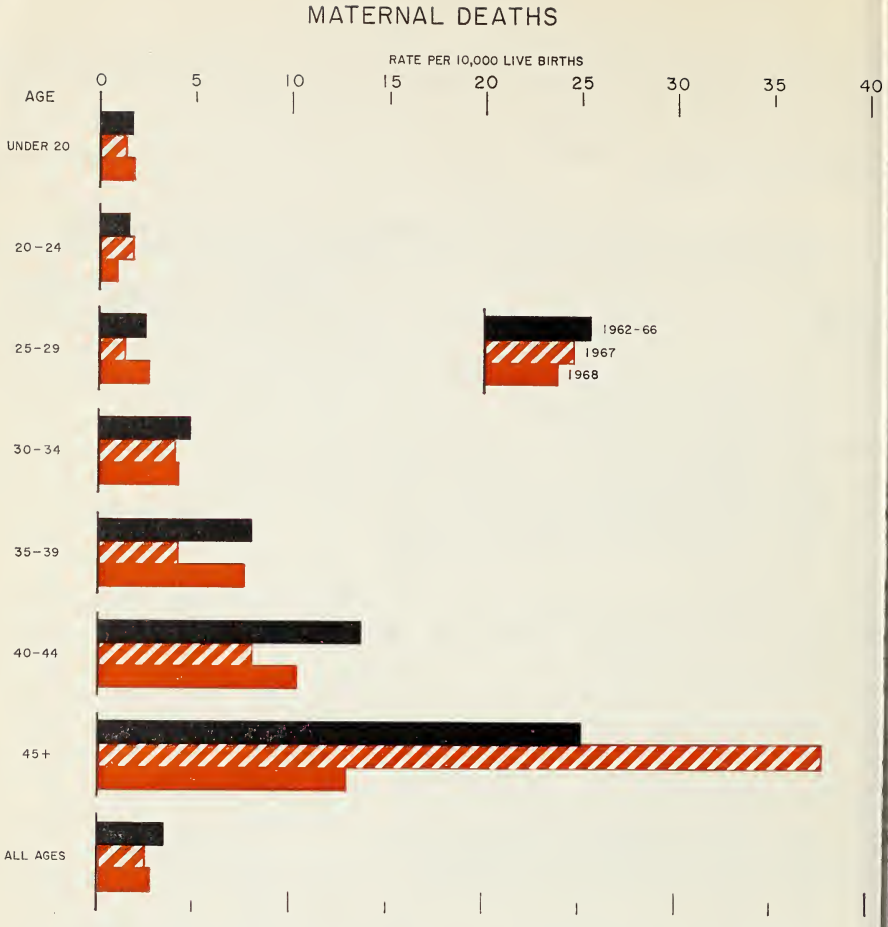
Causes of Maternal Deaths.—Table 23 shows the main causes of maternal deaths uring the years 1966-68.

23.—Maternal Mortality and Rates per 100,000 Live Births, by Cause, 1966-68

International List No.	Cause of Death	Numbers of Deaths			Rates per 100,000 Live Births		
		1966	1967	1968	1966	1967	1968
	Complications of Pregnancy	48	25	31	12	7	9
640,641	Infections of the genito-urinary tract during pregnancy	—	—	—	—	—	—
642	Toxæmias of pregnancy	32	13	18	8	4	5
643	Placenta prævia noted before delivery	1	—	—	--	—	—
644	Other hæmorrhage of pregnancy	1	2	3	--	1	1
645	Ectopic pregnancy	6	3	1	2	1	--
646-649	Other complications of pregnancy	8	7	9	2	2	2
	Abortion	13	8	13	3	2	4
650,652	Abortion without mention of sepsis	4	5	5	1	1	1
651	Abortion with sepsis	9	3	8	2	1	2
	Complications of Delivery	37	33	32	10	9	9
670	Delivery complicated by placenta prævia or antepartum hæmorrhage	8	8	3	2	2	1
671	Delivery complicated by retained placenta	3	2	2	1	1	1
672	Delivery complicated by other postpartum hæmorrhage	10	6	9	3	2	2
673,674	Delivery complicated by abnormality of bony pelvis or malposition of foetus	—	2	3	—	1	1
675	Delivery complicated by prolonged labour of other origin	2	3	2	1	1	1
676,677	Delivery with laceration or other trauma	8	6	7	2	2	2
678	Delivery with other complications of childbirth	6	6	6	2	2	2
	Complications of the Puerperium	37	22	23	10	6	6
680	Puerperal urinary infection without other sepsis	—	1	—	—	--	—
681	Sepsis of childbirth and the puerperium	8	3	5	2	1	1
682-684	Puerperal phlebitis, thrombosis, pyrexia, pulmonary embolism	18	11	8	5	3	2
685,686	Puerperal eclampsia and toxæmia	4	—	1	1	—	--
687-689	Other	7	7	9	2	2	2
	Totals, All Puerperal Causes	135	88	99	35	24	27

Of the 99 maternal deaths in 1968, 31 resulted from complications arising during egnancy, about three fifths of these from some type of toxæmia; 32 resulted from a mplication of delivery, 23 from a post-delivery complication and 13 from abortive delivery.

Age at Death.—Table 24 shows the distribution of maternal deaths by age group; e average age at death is about four or five years higher than the average age of all mothers the time of childbirth. Although death rates for all age groups of mothers have been clining, there have been rather significant changes in the rates. The rate for mothers in e age group 30-34 is far higher than the rate for the 20-24 group, and the rate increases ith the age of the mother.



24.—Maternal Mortality and Rates per 10,000 Live Births, by Age Group, 1966-68
(Exclusive of Newfoundland)

Age Group	Maternal Deaths						Rates per 10,000 Live Births		
	1966		1967		1968		1966	1967	1968
	No.	p.c.	No.	p.c.	No.	p.c.			
Under 20 years	5	3.8	5	5.9	7	7.3	1.2	1.2	1.7
20 — 24 "	17	12.8	21	24.7	11	11.5	1.4	1.7	0.9
25 — 29 "	23	17.3	13	15.3	25	26.0	2.3	1.3	2.5
30 — 34 "	31	23.3	22	25.9	22	22.9	5.0	4.0	4.2
35 — 39 "	33	24.8	13	15.3	21	21.9	9.2	4.1	7.6
40 — 44 "	22	16.5	8	9.4	9	9.4	18.6	8.0	10.3
45 — 49 "	2	1.5	3	3.5	1	1.0	21.6	37.7	12.9
50 years or over	—	—	—	—	—	—	—	—	—
Totals, All Ages	**133**	**100.0**	**85**	**100.0**	**96**	**100.0**	**3.6**	**2.4**	**2.7**
Average age at death.....yrs.	33.0		30.7		31.2		...	...	...
Median age at death[1] ..... "	33.5		30.8		31.1		...	...	...

[1] The age below and above which half of the maternal deaths occurred.

Section 4.—Natural Increase*

The excess of births over deaths, commonly referred to as 'natural increase', is a very nportant factor in the growth of a population. Although the collection of Canadian birth nd death statistics began only in 1921, some idea of the rate of natural increase in the early anadian population may be learned from the estimates shown at the beginning of Sections and 3, which resulted in the following natural increase rates:—

Intercensal Period	Estimated Average Annual Natural Increase Rate (per 1,000 Population)	Intercensal Period	Estimated Average Annual Natural Increase Rate (per 1,000 Population)
1851-61	23	1891-1901	14
1861-71	19	1901-11	18
1871-81	18	1911-21	16
1881-91	16		

Because of the combination of high birth rates and declining death rates—despite the ct that death rates were still relatively high—the annual rate of natural increase during ne late 1800s and early 1900s varied between 14 and 23; in other terms, the population creased at the rate of 1.5 p.c. to 2.5 p.c. each year by natural increase alone, regardless any increase attributable to immigration. During the 1920s and early 1930s the birth te declined more than the death rate and the natural increase rate dropped to a record w of 9.7 in 1937. But higher birth rates during and after World War II and a gradually eclining death rate caused the natural increase rate to rise steadily from 10.9 in 1939 to record 20.3 in 1954. Although after that year there has been a steady drop because of eclining birth rates, the natural increase rate in 1968 was still high at 10.2.

Table 1, pp. 285-286, gives average rates of natural increase in the provinces for ve-year periods 1941-65 and for single years 1966-68. Table 25 gives the provincial figures r males and females separately for 1941, 1951, 1961 and 1966-68. High birth rates and eclining death rates have given Newfoundland, Alberta, Saskatchewan and New Brunswick ne highest rates of natural increase in Canada in recent years (exc luding the Yukon and orthwest Territories).

* For international comparisons, see Section 7, pp. 326-327.

25.—Natural Increase and Rates per 1,000 Population, by Sex and Province, 1941, 1951, 1961 and 1966-68

Province and Year	Excess of Births Over Deaths	Rate per 1,000 Population	Males		Females	
			Number	Rate per 1,000 Males	Number	Rate per 1,000 Females
ewfoundland 1951	8,734	24.2	4,369	23.6	4,365	24.8
1961	12,553	27.5	6,350	27.0	6,203	27.8
1966	11,012	22.3	5,406	21.4	5,606	23.2
1967	9,727	19.5	4,663	18.3	5,064	20.7
1968	9,697	19.1	4,683	18.1	5,014	20.2
rince Edward Island 1941	915	9.6	483	9.8	432	9.4
1951	1,747	17.9	872	17.4	875	18.2
1961	1,860	17.8	925	17.3	935	18.2
1966	1,151	10.6	538	9.8	613	11.4
1967	1,009	9.3	458	8.3	551	10.2
1968	1,115	10.1	497	8.9	618	11.4
ova Scotia 1941	6,989	12.1	3,335	11.3	3,654	13.0
1951	11,313	17.6	5,596	17.2	5,717	18.0
1961	13,247	18.0	6,435	17.2	6,812	18.8
1966	8,742	11.5	4,122	10.8	4,620	12.3
1967	7,674	10.1	3,490	9.2	4,184	11.1
1968	7,164	9.4	3,348	8.8	3,816	10.1

25.—Natural Increase and Rates per 1,000 Population, by Sex and Province, 1941, 1951, 1961 and 1966-68—concluded

Province or Territory and Year	Excess of Births Over Deaths	Rate per 1,000 Population	Males		Females	
			Number	Rate per 1,000 Males	Number	Rate per 1,000 Females
New Brunswick....1941	7,088	15.5	3,396	14.5	3,692	16.5
1951	11,202	21.8	5,522	21.3	5,680	22.1
1961	11,895	19.8	5,844	19.3	6,051	20.5
1966	7,951	12.9	3,789	12.2	4,162	13.6
1967	7,459	12.0	3,451	11.1	4,008	13.0
1968	6,702	10.7	3,080	9.8	3,622	11.7
Quebec....1941	54,871	16.5	27,561	16.5	27,310	16.5
1951	86,030	21.2	42,961	21.2	43,069	21.2
1961	100,130	19.1	49,741	18.9	50,389	19.2
1966	71,198	12.3	34,141	11.8	37,057	12.8
1967	62,806	10.7	29,295	10.0	33,511	11.4
1968	57,085	9.6	26,857	9.1	30,228	10.2
Ontario....1941	33,036	8.7	15,705	8.2	17,331	9.3
1951	70,846	15.4	34,737	15.0	36,109	15.8
1961	106,666	17.1	51,538	16.4	55,128	17.8
1966	77,771	11.2	36,436	10.5	41,335	11.9
1967	72,631	10.1	33,857	9.5	38,774	10.8
1968	70,705	9.7	33,034	9.1	37,671	10.3
Manitoba....1941	8,317	11.4	3,834	10.1	4,483	12.7
1951	13,207	17.0	6,388	16.2	6,819	17.9
1961	15,919	17.3	7,445	15.9	8,474	18.7
1966	10,069	10.5	4,462	9.2	5,607	11.7
1967	9,551	9.9	4,225	8.7	5,326	11.1
1968	9,546	9.8	4,339	8.9	5,207	10.8
Saskatchewan....1941	12,006	13.4	5,651	11.8	6,355	15.2
1951	15,293	18.4	7,192	16.6	8,101	20.4
1961	16,887	18.2	7,766	16.2	9,121	20.5
1966	11,610	12.1	5,220	10.7	6,390	13.7
1967	10,552	11.0	4,564	9.3	5,988	12.8
1968	10,699	11.2	4,757	9.7	5,942	12.6
Alberta....1941	10,923	13.7	5,016	11.8	5,907	16.0
1951	19,836	21.2	9,331	19.0	10,505	23.5
1961	30,051	22.5	14,194	20.6	15,857	24.7
1966	20,915	14.3	9,547	12.8	11,368	15.9
1967	21,168	14.2	9,787	12.9	11,381	15.6
1968	20,186	13.3	9,539	12.3	10,647	14.2
British Columbia....1941	6,533	8.0	2,342	5.4	4,191	10.9
1951	16,439	14.1	7,107	11.9	9,332	16.4
1961	24,188	14.9	10,829	13.1	13,359	16.7
1966	16,212	8.6	6,751	7.1	9,461	10.2
1967	16,729	8.6	7,111	7.2	9,618	10.0
1968	16,859	8.4	7,180	7.1	9,679	9.8
Yukon Territory....1951	257	28.6	115	20.9	142	39.4
1961	464	31.7	218	26.7	246	38.1
1966	287	20.0	135	17.3	152	23.1
1967	312	20.8	150	18.3	162	23.8
1968	286	19.1	119	14.7	167	24.2
Northwest Territories....1951	365	22.8	164	18.2	201	28.7
1961	855	37.2	409	31.9	446	43.8
1966	929	32.3	468	30.1	461	35.0
1967	993	34.2	496	31.4	497	37.7
1968	1,070	34.5	522	31.3	548	38.3
Canada....1941[1]	**140,678**	**12.2**	**67,323**	**11.4**	**73,355**	**13.1**
1951	**255,269**	**18.2**	**124,354**	**17.5**	**130,915**	**18.9**
1961	**334,715**	**18.4**	**161,694**	**17.5**	**173,021**	**19.2**
1966	**237,847**	**11.9**	**111,015**	**11.0**	**126,832**	**12.7**
1967	**220,611**	**10.8**	**101,547**	**9.9**	**119,064**	**11.7**
1968	**211,114**	**10.2**	**97,955**	**9.4**	**113,159**	**11.0**

[1] Excludes Newfoundland and the Yukon and Northwest Territories.

The rates of natural increase are higher for females than for males in all provinces because of the higher death rates for males. In the western provinces particularly, the ratio of males to females in the total population is higher than in other parts of Canada and this in itself tends to lower the rate of natural increase. In Canada, a country with a fairly young population and where immigration has been on a large scale, an excess of males is to be expected but the higher rate of natural increase for females may gradually reduce this excess. The trend is toward an eventual excess of females in the total population—as there now is in most European countries—unless immigration again raises the male ratio or death rates among males are greatly reduced.

Natural Increase in Urban Centres.—The classification of births and deaths by place of residence makes it possible to compile the natural increase in the population of urban centres; natural increase for centres of over 20,000 population can be compiled from the birth and death figures given in Table **2**, pp. 287-290.

Section 5.—Marriages and Divorces

Subsection 1.—Marriages*

In 1968 a record 171,766 marriages were solemnized in Canada, mainly because of the relative increase of men and women in the prime marrying ages—the late teens and the early 20s. This growing proportion of young men and women has advanced the crude marriage rate from a low of 6.9 per 1,000 population in 1963 to 8.3 in 1968. Table **26** gives the number of marriages and the marriage rates for Canada and the provinces for 1941, 1951, 1961 and 1966-68, together with percentages of brides and bridegrooms according to place of birth. For the country as a whole, 82 p.c. of the bridegrooms of 1968 were born in Canada and 66 p.c. in the province in which they were married; 85 p.c. of the brides were born in Canada and 73 p.c. in the province in which they were married. There are wide variations in the pattern of intermarriage of foreign-born and native-born persons as between provinces; in the older Atlantic Provinces and in Quebec and Saskatchewan, there is a greater tendency than in the other provinces to marry native Canadians and in these areas both partners are often born in the same province.

* For international comparisons, see Section 7, pp. 326-327.

26.—Marriages and Rates per 1,000 Population, by Province, with Percentage Distribution of Bridegrooms and Brides by Nativity, 1941, 1951, 1961 and 1966-68

Province and Year	Total Marriages	Rate per 1,000 Population	Born in Province Where Married		Born in Other Provinces		Born Outside Canada	
			Grooms	Brides	Grooms	Brides	Grooms	Brides
	No.		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Newfoundland 1951	2,517	7.0	85.2	96.7	2.4	1.9	12.4	1.4
1961	3,306	7.2	88.0	97.2	3.8	1.6	8.2	1.2
1966	3,728	7.6	89.2	96.6	4.2	1.7	6.7	1.7
1967	4,021	8.0	90.5	95.4	4.2	2.5	5.3	2.1
1968	4,242	8.4	90.7	96.3	4.5	2.2	4.8	1.5
Prince Edward Island 1941	673	7.1	78.8	86.6	15.0	9.4	6.2	4.0
1951	583	5.9	82.3	91.1	12.9	6.0	4.8	2.9
1961	624	6.0	81.7	89.6	15.4	7.2	2.9	3.2
1966	752	6.9	77.3	89.2	18.5	9.0	4.3	1.7
1967	802	7.4	76.9	88.5	18.7	9.5	4.4	2.0
1968	750	6.8	78.4	87.6	17.7	9.9	3.9	2.5
Nova Scotia 1941	6,596	11.4	73.2	83.8	16.8	9.5	10.0	6.7
1951	5,094	7.9	78.2	86.7	15.9	9.0	6.0	4.3
1961	5,292	7.2	75.2	87.8	18.8	8.8	6.0	3.4
1966	5,833	7.7	76.8	86.8	17.3	9.5	5.8	3.7
1967	6,189	8.2	76.5	86.5	17.0	9.9	6.5	3.6
1968	6,284	8.3	77.3	86.1	16.5	9.7	6.2	4.2

26.—Marriages and Rates per 1,000 Population, by Province, with Percentage Distribution of Bridegrooms and Brides by Nativity, 1941, 1951, 1961 and 1966-68—concluded

Province or Territory and Year	Total Marriages	Rate per 1,000 Population	Born in Province Where Married		Born in Other Provinces		Born Outside Canada	
			Grooms	Brides	Grooms	Brides	Grooms	Brides
	No.		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
New Brunswick....1941	4,941	10.8	78.5	84.4	13.3	9.7	8.2	5.9
1951	4,386	8.5	80.0	86.9	10.1	6.7	9.8	6.4
1961	4,504	7.5	75.4	86.3	14.9	7.9	9.7	5.8
1966	5,165	8.4	76.2	85.8	14.6	8.8	9.2	5.4
1967	5,452	8.8	76.3	85.6	15.0	9.0	8.7	5.5
1968	5,389	8.6	76.4	86.4	14.9	8.9	8.8	4.8
Quebec....1941	32,782	9.8	86.1	89.3	6.7	5.9	7.2	4.8
1951	35,704	8.8	86.7	89.5	6.1	5.5	7.2	5.0
1961	35,943	6.8	83.6	87.4	5.7	4.8	10.7	7.8
1966	44,411	7.7	83.9	87.2	5.7	5.0	10.4	7.8
1967	46,275	7.9	83.7	87.1	5.7	5.0	10.6	8.0
1968	46,004	7.8	78.5	86.9	10.2	4.7	11.3	8.4
Ontario....1941	43,270	11.4	89.2	89.0	4.2	4.5	6.7	6.5
1951	45,198	9.8	65.9	72.4	14.6	12.2	19.5	15.4
1961	44,434	7.1	61.5	67.2	12.9	11.0	25.6	21.8
1966	54,571	7.8	61.0	65.9	14.2	12.0	24.8	22.0
1967	58,377	8.2	60.9	65.8	14.3	12.1	24.9	22.1
1968	62,109	8.5	59.5	65.0	13.7	11.5	26.8	23.5
Manitoba....1941	8,305	11.4	63.0	73.7	17.4	15.0	19.6	11.4
1951	7,366	9.5	67.9	75.1	15.4	13.3	16.8	11.6
1961	6,512	7.1	66.6	74.5	18.5	14.5	14.8	11.0
1966	7,312	7.6	67.7	75.6	18.2	13.9	14.1	10.4
1967	7,942	8.2	68.3	75.7	18.1	14.1	13.6	10.2
1968	8,291	8.5	68.1	75.6	16.8	12.9	15.1	11.5
Saskatchewan....1941	7,036	7.9	64.7	79.1	16.1	10.0	19.1	10.9
1951	6,805	8.2	78.3	86.4	10.7	6.4	11.1	7.2
1961	6,149	6.6	79.3	85.8	11.9	8.7	8.8	5.5
1966	6,987	7.3	77.7	85.3	14.6	9.2	7.7	5.6
1967	7,579	7.9	77.2	84.1	15.1	9.9	7.7	6.0
1968	7,747	8.1	77.4	84.6	15.1	9.7	7.5	5.7
Alberta....1941	8,470	10.6	50.0	63.4	23.9	19.9	26.2	16.8
1951	9,305	9.9	56.0	67.4	25.7	19.6	18.3	13.0
1961	10,474	7.9	54.4	62.3	25.8	21.8	19.8	15.9
1966	11,879	8.1	56.4	64.1	26.2	22.0	17.3	14.0
1967	12,903	8.7	56.0	63.4	26.6	22.8	17.4	13.9
1968	13,640	8.9	55.9	62.4	27.0	23.1	17.1	14.5
British Columbia....1941	9,769	11.9	35.9	43.5	35.6	37.1	28.5	19.4
1951	11,272	9.7	35.5	41.6	43.1	43.0	21.3	15.5
1961	10,964	6.7	36.4	45.9	35.9	32.4	27.7	21.8
1966	14,682	7.8	42.0	51.2	34.5	29.0	23.6	19.8
1967	16,026	8.2	41.8	51.5	33.7	28.6	24.5	19.9
1968	16,914	8.4	42.2	50.9	32.5	28.0	25.4	21.1
Yukon Territory....1961	128	8.8	12.5	24.2	63.3	52.3	24.2	23.4
1966	94	6.5	16.0	16.0	57.4	69.1	26.6	14.9
1967	133	8.9	11.3	23.3	65.4	60.2	23.3	16.5
1968	170	11.3	13.5	28.2	65.9	54.7	20.6	17.1
Northwest Territories....1961	145	6.3	54.5	61.4	35.9	31.7	9.7	6.9
1966	182	6.3	51.1	62.6	39.0	29.7	9.9	7.7
1967	180	6.2	47.8	64.4	38.3	29.4	13.9	6.1
1968	226	7.3	49.6	64.2	39.4	29.2	11.1	6.6
Canada[1]....**1941**	**121,842**	**10.6**	**76.8**	**81.5**	**11.4**	**10.1**	**11.7**	**8.4**
1951	**128,230**	**9.2**	**70.5**	**76.5**	**15.1**	**12.8**	**14.5**	**10.6**
1961	**128,475**	**7.0**	**67.9**	**74.2**	**14.3**	**11.7**	**17.9**	**14.1**
1966	**155,596**	**7.8**	**68.2**	**74.1**	**14.8**	**11.9**	**17.0**	**14.0**
1967	**165,879**	**8.1**	**67.9**	**73.7**	**14.9**	**12.2**	**17.2**	**14.2**
1968	**171,766**	**8.3**	**65.8**	**73.0**	**15.9**	**11.9**	**18.3**	**15.2**

[1] Newfoundland included from 1951 and the Yukon and Northwest Territories from 1961.

Age and Marital Status of Brides and Bridegrooms.—Table 27 shows that 91.3 p.c. f the brides and 91.6 p.c. of the grooms in 1968 had never previously married. The edian age at marriage of bachelors was 23.5 years and that of spinsters 21.3.

27.—Brides and Bridegrooms, by Age and Marital Status, 1968

Age Group	Brides							
	Numbers				Percentages			
	Spinsters	Widows	Divorced	Total	Spinsters	Widows	Divorced	Total
-14 years	89	—	—	89	0.1	—	—	0.1
-19 "	47,454	13	23	47,4 0	30.3	0.2	0.3	27.6
-24 "	85,592	204	1,028	86,824	54.6	2.7	13.7	50.5
-29 "	16,015	431	1,914	18,360	10.2	5.8	25.5	10.7
-34 "	3,757	400	1,447	5,604	2.4	5.4	19.3	3.3
-39 "	1,608	522	1,065	3,195	1.0	7.0	14.2	1.9
-44 "	913	775	890	2,578	0.6	10.4	11.8	1.5
-49 "	609	960	588	2,157	0.4	12.8	7.8	1.3
-54 "	314	1,111	327	1,752	0.2	14.9	4.4	1.0
-59 "	215	1,027	148	1,390	0.1	13.7	2.0	0.8
-64 "	121	779	52	952	0.1	10.4	0.7	0.6
years or over	93	1,250	29	1,372	0.1	16.7	0.4	0.8
Totals, Stated Ages	**156,780**	**7,472**	**7,511**	**171,763**	**100.0**	**100.0**	**100.0**	**100.0**
e not stated	3	—	—	3	...	...	...	...
Totals, All Ages	**156,783**	**7,472**	**7,511**	**171,766**	**91.3**	**4.4**	**4.4**	**100.0**
erage ages.....yrs.	22.6	51.0	34.6	24.4	...	...	...	...
edian ages[1] "	21.3	52.0	32.6	21.6	...	...	...	...

Age Group	Bridegrooms							
	Numbers				Percentages			
	Bachelors	Widowers	Divorced	Total	Bachelors	Widowers	Divorced	Total
-14 years	1	—	—	1	- -	—	—	- -
-19 "	11,831	—	1	11,832	7.5	—	- -	6.9
-24 "	92,487	33	362	92,882	58.8	0.5	4.5	54.1
-29 "	36,250	129	1,615	37,994	23.0	2.0	19.9	22.1
-34 "	9,115	215	1,723	11,053	5.8	3.4	21.3	6.4
-39 "	3,563	339	1,411	5,313	2.3	5.3	17.4	3.1
-44 "	1,842	424	1,132	3,398	1.2	6.7	14.0	2.0
-49 "	909	594	830	2,333	0.6	9.4	10.2	1.4
-54 "	537	756	478	1,771	0.3	11.9	5.9	1.0
-59 "	332	935	295	1,562	0.2	14.7	3.6	0.9
-64 "	233	843	168	1,244	0.1	13.3	2.1	0.7
years or over	206	2,084	90	2,380	0.1	32.8	1.1	1.4
Totals, Stated Ages	**157,306**	**6,352**	**8,105**	**171,763**	**100.0**	**100.0**	**100.0**	**100.0**
ge not stated	3	—	—	3	...	...	...	...
Totals, All Ages	**157,309**	**6,352**	**8,105**	**171,766**	**91.6**	**3.7**	**4.7**	**100.0**
verage ages.....yrs.	25.0	57.0	38.0	26.8	...	...	...	...
edian ages[1] "	23.5	58.7	36.2	23.9	...	...	...	...

[1] The ages below and above which half of the marriages occurred.

Religious Denominations of Brides and Bridegrooms.—The distribution of ides and bridegrooms by religious denominations is roughly the same as that for the popu- tion as a whole. Table 28 shows the relatively strong influence that religion has on arriage. About 65 p.c. of all marriages are between persons of the same religious denom- ation; in 1968 among those of Jewish faith it was about 88 p.c.; among Roman Catholics out 82 p.c.; United Church about 52 p.c.; and Eastern Orthodox about 66 p.c. Except r those of the Jewish faith, the proportions of persons of the same faith marrying appears be declining slightly in recent years.

28.—Marriages by Religious Denominations of Contracting Parties, 1968

Denomination of Bridegroom	Denomination of Bride										Total Marriages	P.C. of Grooms
	Anglican	Baptist	Eastern Orthodox	Jewish	Lutheran	Presbyterian	Roman Catholic[1]	United Church	Other Sects	Not Stated		
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	
Anglican	8,800	684	113	37	569	858	4,050	4,777	1,066	10	20,964	12.2
Baptist	725	2,104	26	5	123	206	794	1,109	414	4	5,510	3.2
Eastern Orthodox	155	27	1,893	7	88	35	514	271	94	3	3,087	1.8
Jewish	61	8	7	1,941	12	14	97	48	64	1	2,253	1.3
Lutheran	692	150	47	9	1,750	207	1,111	1,261	418	2	5,647	3.3
Presbyterian	966	211	25	10	179	1,685	1,012	1,328	289	2	5,707	3.3
Roman Catholic[1]	3,758	726	322	66	890	887	66,602	4,813	1,820	11	79,895	46.5
United Church	4,709	933	185	15	1,010	1,274	4,955	16,669	1,474	9	31,233	18.2
Other sects	1,450	463	76	50	489	371	2,529	2,218	9,706	7	17,359	10.1
Not stated	15	5	—	1	1	4	30	19	9	27	111	...
Totals	**21,331**	**5,311**	**2,694**	**2,141**	**5,111**	**5,541**	**81,694**	**32,513**	**15,354**	**76**	**171,766**	**100.0**
P.C. of brides	12.4	3.1	1.6	1.2	3.0	3.2	47.6	18.9	8.9	...	100.0	64.7[2]

[1] Includes Greek Catholic. [2] Percentage of marriages between contracting parties of the same religious denomination.

Subsection 2.—Divorces

Before World War I the number of divorces granted in Canada represented less than one per 1,000 of the yearly number of marriages. After that War, however, there was a definite upward trend; the number advanced to 8,213 in 1947, declined gradually to a post-war low of 5,270 in 1951 and since then has moved sharply upward; the 1968 figure of 11,343 was the highest on record.

The crude divorce rate rose from 36.0 per 100,000 population in 1960 to 54.7 in both 1967 and 1968. A relatively liberal federal divorce law became effective on July 2, 1968, which is expected to lead to a continued rise of the Canadian divorce rate; the impact of the new law will first appear during 1969 because few cases were completed under its provisions in 1968.

29.—Dissolutions of Marriage (Divorces), by Province, 1941-68

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Canada
	Numbers										
Av. 1941-45	..	2	92	104	99	1,398	305	207	432	937	3,576
" 1946-50	..	21	185	245	303	2,839	500	383	724	1,676	6,877
" 1951-55	5	10	212	167	327	2,430	356	231	612	1,461	5,811
" 1956-60	5	4	227	194	403	2,801	315	247	788	1,514	6,498
" 1961-65	5	8	277	199	380	3,342	376	298	1,226	1,592	7,723
1966	11	18	406	155	988	4,101	524	321	1,567	2,124	10,239
1967	11	18	394	292	727	4,350	477	399	1,736	2,734	11,165
1968	15	20	497	143	606	5,036	465	384	1,916	2,220	11,343
	Rates per 100,000 Population										
Av. 1941-45	..	2.2	15.4	22.4	2.9	35.8	42.0	24.4	54.3	104.8	30.3
" 1946-50	..	22.1	29.7	49.3	8.0	66.4	66.8	45.9	84.6	155.8	53.0
" 1951-55	1.3	9.8	32.0	31.4	7.6	49.2	44.0	26.9	60.3	116.8	39.1
" 1956-60	1.2	4.0	32.0	33.9	8.2	48.4	35.9	27.6	65.3	99.8	38.2
" 1961-65	1.0	7.8	36.9	32.7	6.9	51.4	39.8	31.8	87.7	93.3	40.8
1966	2.2	16.6	53.7	25.1	17.1	58.9	54.4	33.6	107.1	113.4	51.2
1967	2.2	16.5	52.0	47.1	12.4	60.8	49.5	41.6	116.5	140.4	54.7
1968	3.0	18.2	65.4	22.9	10.2	68.9	47.9	40.0	125.6	110.6	54.7

[1] Includes 17 in Yukon Territory and three in the Northwest Territories. [2] Includes 21 in Yukon Territory and three in the Northwest Territories. [3] Includes 21 in Yukon Territory and six in the Northwest Territories. [4] Includes 30 in Yukon Territory and 11 in the Northwest Territories.

Section 6.—Canadian Life Tables

Life tables are measures of life expectancy compiled from the death rates prevailing ver a period. They assume that a given cohort of people (usually 100,000) are born simul-aneously in a particular year and continue to be subject all their lives to the death rates revailing in that year, or perhaps to the average death rates for, say, a three-year period entred around that year. The "expected" deaths in the cohort are calculated (in the case f a "complete" life table) for the first year of life, second year of life, etc., and the diminish-ng cohort is "followed" for 100 or more years until it has been virtually eliminated. Life xpectancy at birth is calculated for the entire cohort and, subsequently, remaining life xpectancy is calculated for the survivors at one year, two years, etc. It should be realized hat the assumptions of such a life table are never fulfilled in practice and that the hypo-hetical cohorts in life tables do not represent any actual population. Usually, the persons n an actual cohort born in the life-table year will have a higher life expectancy than those n the life-table cohort because, during their lifetimes, public health conditions will pre-umably constantly improve and standards of medical care will also presumably advance.

The function of the life table is to express in compact form the mortality trends of the eriod for which it is compiled. In particular, when a series of life tables for a given country an be compared, they show a great deal about the historical changes in the mortality onditions prevailing in that country. Six official series of life tables for Canada and the rovinces and regions have been published to date, based on deaths in the three-year period round each of the Censuses of 1931, 1941, 1951, 1956, 1961 and 1966.

The life-table values for 1966 are given for selected years in Table **30**. This table shows hat, at 1965-67 mortality rates, 2,525 of 100,000 males born would have died in their first ear with 97,475 surviving to one year of age, that 156 more would have died in their second ear with 97,319 reaching their second birthday, and so on. There would be 252 survivors t 100 years of age. The "Probability of Dying" column shows the ratio between the popu-tion at each age and the number of "expected" deaths in the coming year. Finally, as lready stated, the "Expectation of Life" column shows the number of remaining years of fe that can be expected at each age, given the 1965-67 mortality rates.

Table **30** also shows that the male probabilities of dying were higher than the corre-ponding female probabilities over the entire period from birth to 90 years. Mortality ates, and consequently the probabilities of dying, were lowest at about age 10 for both exes. Above this age the male probability rose quite rapidly, reflecting male accident ortality, and the female probability rose more gradually. Mortality for men between ges 20 and 35 was fairly constant but the male probability began to rise steeply at age 40, ue mainly to cardiovascular mortality. Female probabilities after this age rose steadily ut less rapidly. It may be observed that about 11,700 males would have died by age 50 compared with 7,100 females, and that about 57,500 males would have survived to age 70 compared with 74,400 females.

In the 1966 table, Canadian life expectancy at birth had reached a new high point of most 68.8 years for males and 75.2 years for females—comparable to the expectancies for her countries with highly developed programs of medical and public health care. Because the still substantial level of infant mortality, the expectations for male and female ildren one year old were somewhat higher than the corresponding expectancies at birth. xpectation at age 20 was 51.5 years for men and 57.4 years for women and, at age 40, .0 years for men and 38.2 for women. By age 65, the remaining expectancies were 13.6 ars for men and 16.7 years for women.

Table **31** summarizes the life expectancy figures extracted from the Canadian life bles for 1931, 1941, 1951, 1956, 1961 and 1966. According to these figures, male life pectancy at birth rose steadily from 60.0 years in 1931 to 67.6 years in 1956 and then ore slowly to 68.8 years in 1966 for a total advance of 8.8 years. Female expectancy at

birth rose more quickly than male, and substantially even from 1956 to 1966. The total increase was 13.1 years, from 62.1 years in 1931 to 75.2 years in 1966. The gap between male and female expectancy at birth rose from 2.1 years in 1931 to 6.4 years in 1966.

30.—Canadian Life Table, 1966

Age	Males				Females			
	Number Living at Each Age	Number Dying Between Each Age and the Next	Probability of Dying Before Reaching Next Birthday	Expectation of Life	Number Living at Each Age	Number Dying Between Each Age and the Next	Probability of Dying Before Reaching Next Birthday	Expectation of Life
				yrs.				yrs.
At birth	100,000	2,525	.02525	68.75	100,000	2,008	.02008	75.18
1 year	97,475	156	.00160	69.53	97,992	130	.00133	75.71
2 years	97,319	102	.00105	68.64	97,862	86	.00088	74.81
3 "	97,217	88	.00091	67.71	97,776	68	.00070	73.88
4 "	97,129	74	.00076	66.77	97,708	61	.00063	72.93
5 "	97,055	268	.00067	65.82	97,647	202	.00055	71.97
10 "	96,787	271	.00046	61.00	97,445	154	.00030	67.12
15 "	96,516	601	.00093	56.16	97,291	235	.00041	62.22
20 "	95,915	855	.00168	51.50	97,056	271	.00054	57.37
25 "	95,060	753	.00170	46.94	96,785	311	.00059	52.52
30 "	94,307	767	.00154	42.29	96,474	428	.00076	47.68
35 "	93,540	1,032	.00188	37.62	96,046	630	.00110	42.88
40 "	92,508	1,615	.00287	33.01	95,416	979	.00170	38.15
45 "	90,893	2,594	.00465	28.55	94,437	1,536	.00270	33.51
50 "	88,299	4,180	.00783	24.31	92,901	2,333	.00424	29.02
55 "	84,119	6,258	.01267	20.38	90,568	3,467	.00648	24.70
60 "	77,861	8,877	.02001	16.81	87,101	5,160	.01004	20.58
65 "	68,984	11,436	.03033	13.63	81,941	7,568	.01578	16.71
70 "	57,548	13,544	.04425	10.83	74,373	10,892	.02508	13.14
75 "	44,004	14,859	.06651	8.37	63,481	15,273	.04244	9.94
80 "	29,145	13,552	.10018	6.36	48,208	18,321	.07318	7.26
85 "	15,593	9,401	.14560	4.79	29,887	16,534	.12196	5.16
90 "	6,192	4,551	.20493	3.60	13,353	9,767	.19348	3.60
95 "	1,641	1,389	.27799	2.71	3,586	3,148	.29246	2.48
100 "	252		.36616	2.04	438		.42360	1.69

An examination of the expectancies at one year of age shows that lower levels of infan mortality greatly increased expectancy at birth. Male expectancy at one year of ag rose by 4.8 years over the 35-year period and showed virtually no change between 196 and 1966. Female expectancy at one year, however, rose by exactly 10 years, from 65. in 1931 to 75.7 in 1966, and showed a moderate increase since 1961. It may be noted that in 1931, expectancy at birth was considerably lower than expectancy at one year of age and that in 1966 the difference was much smaller. Male expectancy at age 20 rose by onl 2.5 years over the 1931-66 period and not at all between 1961 and 1966. The correspondin

31.—Expectation of Life, 1931, 1941, 1951, 1956, 1961 and 1966

Age	1931		1941		1951		1956		1961		1966	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.
At birth	60.00	62.10	62.96	66.30	66.33	70.83	67.61	72.92	68.35	74.17	68.75	75.18
1 year	64.69	65.71	66.14	68.73	68.33	72.33	69.04	73.99	69.50	74.98	69.53	75.71
2 years	64.46	65.42	65.62	68.16	67.56	71.55	68.21	73.15	68.63	74.11	68.64	74.81
3 "	63.84	64.75	64.88	67.38	66.68	70.66	67.31	72.24	67.71	73.18	67.71	73.88
4 "	63.11	63.99	64.07	66.56	65.79	69.74	66.38	71.31	66.78	72.23	66.77	72.93
5 "	62.30	63.17	63.22	65.69	64.86	68.80	65.45	70.35	65.83	71.27	65.82	71.97
10 "	57.96	58.72	58.70	61.08	60.15	64.02	60.67	65.51	61.02	66.41	61.00	67.12
15 "	53.41	54.15	54.06	56.36	55.39	59.19	55.86	60.64	56.20	61.51	56.16	62.22
20 "	49.05	49.76	49.57	51.76	50.76	54.41	51.19	55.80	51.51	56.65	51.50	57.37
25 "	44.83	45.54	45.18	47.26	46.20	49.67	46.61	50.97	46.91	51.80	46.94	52.52
30 "	40.55	41.38	40.73	42.81	41.60	44.94	41.98	46.17	42.24	46.98	42.29	47.68
35 "	36.23	37.19	36.26	38.37	37.00	40.24	37.34	41.40	37.56	42.18	37.62	42.88
40 "	31.98	33.02	31.87	33.99	32.45	35.63	32.74	36.69	32.96	37.45	33.01	38.15
45 "	27.79	28.87	27.60	29.67	28.05	31.14	28.28	32.09	28.49	32.82	28.55	33.51
50 "	23.72	24.79	23.49	25.46	23.88	26.80	24.04	27.65	24.25	28.33	24.31	29.02
55 "	19.88	20.84	19.64	21.42	20.02	22.61	20.12	23.38	20.30	24.01	20.38	24.70
60 "	16.29	17.15	16.06	17.62	16.49	18.64	16.54	19.34	16.73	19.90	16.81	20.58
65 "	12.98	13.72	12.81	14.08	13.31	14.97	13.36	15.60	13.53	16.07	13.63	16.71
70 "	10.06	10.63	9.94	10.93	10.41	11.62	10.51	12.17	10.67	12.58	10.83	13.14
75 "	7.57	7.98	7.48	8.19	7.89	8.73	7.98	9.15	8.21	9.48	8.37	9.94
80 "	5.61	5.92	5.54	6.03	5.84	6.38	5.89	6.75	6.14	6.90	6.36	7.26
85 "	4.10	4.38	4.05	4.35	4.27	4.57	4.27	4.97	4.46	4.89	4.79	5.16
90 "	2.97	3.24	2.93	3.13	3.10	3.24	3.07	3.67	3.16	3.39	3.60	3.60
95 "	2.14	2.40	2.09	2.26	2.24	2.27	2.18	2.74	2.20	2.32	2.71	2.48
100 "	1.53	1.77	1.46	1.64	1.60	1.59	1.52	2.05	1.49	1.56	2.04	1.69

32.—Expectation of Life at Selected Ages, by Province or Region, 1931, 1941, 1951, 1956, 1961 and 1966

Province or Region and Age	1931		1941		1951		1956		1961		1966	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.
Atlantic Provinces—												
At birth	60.20	61.91	61.69	64.63	66.57	70.50	67.91	72.89	68.58	73.92	..	..
1 year	64.76	65.44	65.68	67.78	69.08	72.41	69.68	74.23	70.06	75.10	..	..
20 years	49.22	49.62	49.36	51.33	51.59	54.52	51.95	56.01	52.17	56.82	..	..
40 "	32.73	33.70	32.22	34.19	33.48	35.99	33.58	37.03	33.76	37.70	..	..
65 "	13.63	14.59	13.13	14.50	13.90	15.42	13.95	15.91	14.16	16.35	..	..
Newfoundland—												
At birth	..	..	..	..	..	..	..	..	..	..	68.94	74.43
1 year	..	..	..	..	..	..	..	..	..	..	70.22	75.41
20 years	..	..	..	..	..	..	..	..	..	..	52.27	57.08
40 "	..	..	..	..	..	..	..	..	..	..	33.78	37.83
65 "	..	..	..	..	..	..	..	..	..	..	14.31	16.22
Prince Edward Island—												
At birth	..	..	..	..	..	..	..	..	..	..	68.32	75.51
1 year	..	..	..	..	..	..	..	..	..	..	69.43	76.22
20 years	..	..	..	..	..	..	..	..	..	..	51.56	57.88
40 "	..	..	..	..	..	..	..	..	..	..	33.49	38.77
65 "	..	..	..	..	..	..	..	..	..	..	14.43	17.57
Nova Scotia—												
At birth	..	..	..	..	..	..	..	..	..	..	68.34	74.80
1 year	..	..	..	..	..	..	..	..	..	..	69.16	75.43
20 years	..	..	..	..	..	..	..	..	..	..	51.32	57.16
40 "	..	..	..	..	..	..	..	..	..	..	32.99	37.96
65 "	..	..	..	..	..	..	..	..	..	..	13.80	16.75
New Brunswick—												
At birth	..	..	..	..	..	..	..	..	..	..	68.53	76.26
1 year	..	..	..	..	..	..	..	..	..	..	69.30	75.97
20 years	..	..	..	..	..	..	..	..	..	..	51.58	57.79
40 "	..	..	..	..	..	..	..	..	..	..	33.35	38.53
65 "	..	..	..	..	..	..	..	..	..	..	14.01	17.04
Quebec—												
At birth	56.19	57.80	60.18	63.07	64.42	68.58	66.13	71.02	67.28	72.77	67.88	73.91
1 year	62.45	62.62	64.45	66.28	67.19	70.71	68.11	72.56	68.71	73.80	68.77	74.57
20 years	47.77	47.73	48.38	49.85	49.76	52.92	50.36	54.43	50.82	55.54	50.81	56.25
40 "	31.04	31.75	30.94	32.72	31.54	34.36	31.91	35.42	32.29	36.38	32.33	37.05
65 "	12.60	13.15	12.44	13.41	12.81	14.17	12.88	14.73	13.16	15.27	13.24	15.79

Ontario—												
At birth	61.30	63.92	64.55	68.43	66.87	71.85	67.80	73.57	68.32	74.40	68.71	75.53
1 year	65.05	66.84	66.74	70.07	68.34	72.91	68.76	74.25	69.14	74.95	69.29	75.87
20 years	48.79	50.13	49.57	52.40	50.58	54.76	50.81	55.95	51.03	56.53	51.14	57.45
40 "	31.56	32.90	31.54	34.11	32.03	35.75	32.24	36.74	32.35	37.27	32.44	38.17
65 "	12.67	13.47	12.63	14.03	13.07	14.92	12.97	15.56	13.05	15.90	13.10	16.72
Prairie Provinces—												
At birth	63.47	65.49	65.43	68.19	68.36	72.28	69.26	74.18	69.79	75.66	..	..
1 year	67.24	68.30	68.02	70.22	69.90	73.43	70.48	75.06	70.96	76.40	..	..
20 years	50.98	51.68	51.28	53.08	52.24	55.53	52.55	56.88	52.90	58.08	..	..
40 "	33.34	34.35	33.32	34.96	33.86	36.63	34.12	37.71	34.37	38.83	..	..
65 "	13.60	14.40	13.35	14.62	13.88	15.51	14.01	16.20	14.22	17.00	..	..
Manitoba—												
At birth	..	..	..	..	..	..	..	..	..	..	69.80	76.11
1 year	..	..	..	..	..	..	..	..	..	..	70.54	76.57
20 years	..	..	..	..	..	..	..	..	..	..	52.48	58.25
40 "	..	..	..	..	..	..	..	..	..	..	34.11	39.10
65 "	..	..	..	..	..	..	..	..	..	..	14.18	17.42
Saskatchewan—												
At birth	..	..	..	..	..	..	..	..	..	..	70.45	76.45
1 year	..	..	..	..	..	..	..	..	..	..	71.49	77.06
20 years	..	..	..	..	..	..	..	..	..	..	53.50	58.80
40 "	..	..	..	..	..	..	..	..	..	..	35.22	39.61
65 "	..	..	..	..	..	..	..	..	..	..	15.00	17.59
Alberta—												
At birth	..	..	..	..	..	..	..	..	..	..	70.10	76.24
1 year	..	..	..	..	..	..	..	..	..	..	70.82	76.72
20 years	..	..	..	..	..	..	..	..	..	..	52.70	58.30
40 "	..	..	..	..	..	..	..	..	..	..	34.36	39.09
65 "	..	..	..	..	..	..	..	..	..	..	14.46	17.34
British Columbia—												
At birth	62.15	65.34	63.65	68.96	66.73	72.37	68.14	73.91	68.94	75.42	69.21	75.84
1 year	64.55	67.16	65.40	70.17	67.97	73.32	69.19	74.68	69.83	76.00	69.94	76.33
20 years	48.68	51.18	48.99	53.09	50.41	55.51	51.32	56.52	51.85	57.61	51.91	58.01
40 "	32.17	34.27	31.70	35.14	32.45	36.72	33.11	37.49	33.56	38.46	33.70	38.93
65 "	13.36	14.60	12.96	14.83	13.50	15.86	13.72	16.15	13.98	16.94	14.20	17.41

[1] Figures for 1931 and 1941 are exclusive of Newfoundland.

gain for females was 7.6 years. Female expectancy at age 20 in 1966 was nearly six years above male expectancy. Male expectancy at age 40 inched up by about a year over the period to reach 33.0 years in 1966, while the corresponding female expectancy rose over five years from 33.0 years in 1931 to 38.2 years. At age 65, male expectancy rose 0.6 years from 13.0 in 1931 to 13.6 in 1966, while female expectancy advanced three years from 13.7 to 16.7 in the same comparison. The 1966 gap between male and female expectancy was therefore 5.2 years at age 40 and 3.0 years at age 65.

The improvement in life expectancy for children and young adults was largely due to greatly reduced mortality from infectious diseases. Gains in life expectancy for adult males have been held down by, among other factors, (1) continued high cardiovascular mortality, (2) continued high accident mortality, and (3) the rise in lung cancer mortality. Further improvements in life expectancy seem primarily to depend upon (1) additional reductions in infant mortality, (2) lower accident mortality rates, especially among young men, and (3) advances in combating diseases associated with middle and old age, such as cardiovascular-renal conditions, cancer and respiratory conditions. Up to now, these diseases have proved very difficult to control and it is therefore doubtful whether future improvement in life expectancy will be comparable with the advance shown in the past 35 years.

Table 32 shows the life expectancies for five Canadian regions for selected years over the period 1931-61, and the corresponding expectancies for all ten provinces for 1966. The steady widening of the gap between male and female expectancies, so evident at the national level, was common to the expectancies for all five regions. Throughout the 1931-61 period, the Prairie Provinces showed the highest male expectancies and, in the later years, the highest female expectancies as well. The Quebec expectancies were consistently the lowest but they showed the largest gains over the period. Between 1931 and 1961, Quebec life expectancies at birth rose by 11.1 years for males and 15.0 years for females, as compared with the national advances of 8.4 years for males and 12.1 years for females.

In 1966, for the first time, expectancies were calculated for all ten provinces. Male expectancies at birth ranged from 70.5 for Saskatchewan to 67.9 for Quebec, a difference of 2.6 years; Saskatchewan also had the highest expectancies for females at 76.5 years and Quebec the lowest at 73.9 years. In general terms, it may be stated that 1966 expectancies for all four western provinces, at all the selected ages, were moderately above the national average, with the Saskatchewan rates being the highest in all cases. Ontario rates were fairly close to the Canadian average, except those for older men which were slightly below it. Quebec rates were still the lowest in the country, rather less than a year below the national average for males from birth to age 40 and somewhat more than a year below the national average for the corresponding range for females. For the Atlantic Provinces, expectancies at birth and at one year of age clustered fairly closely around the Canadian average, although the Newfoundland female expectancy at birth was a little lower. This statement also applies to expectancies at age 20, with Newfoundland males slightly above the national level. For older males, most Atlantic region expectancies were a little above the national figure and for older females they fluctuated about the average.

Section 7.—International Comparisons of Vital Statistics

Table 33 gives a summary of Canada's national and provincial vital statistics rates along with those of several other countries. It will be noted that among the countries listed the low crude death rate in Canada is bettered by two countries—Venezuela and Japan—and that some of the provinces have lower rates than most other countries. The Canadian birth rate ranks seventeenth among those listed. However, 11 countries reported lower rates of infant mortality, notably Sweden, the Netherlands and Finland—12.9, 13.6 and 14.0, respectively, as compared with Canada's rate of 20.8.

NOTE.—Countries are ranked according to the highest rates for births, marriages and natural increase and according to the lowest for deaths. SOURCES: United Nations and World Health Organization publications and reports of certain countries concerned.

Country or Province	Births		Deaths		Infant Mortality		Neonatal Mortality[1]		Maternal Mortality		Marriages		Natural Increase	
	Rate[2]	Rank	Rate[2]	Rank	Rate[3]	Rank	Rate[3]	Rank	Rate[4]	Rank	Rate[2]	Rank	Rate[2]	Rank
Australia	20.0	12	9.1	12	17.8	8	12.9	9	2.8	12	8.8	6	10.9	11
Austria	17.2	22	13.1	30	25.5	20	18.4	19	4.0[5]	16	7.6	16	4.1	28
Belgium	14.8	29	12.8	29	22.0	16	16.8[6]	17	2.7[6]	8	7.2	20	2.0	30
Canada	**17.6**	**17**	**7.4**	**3**	**20.8**	**12**	**14.8**	**14**	**2.7**	8	**8.3**	**13**	**10.2**	**15**
Newfoundland	25.3	...	6.2	...	24.1	...	13.8	...	2.3	...	8.4	...	19.1	...
Prince Edward Island	19.1	...	9.0	...	26.6	...	19.0	...	—	...	6.8	...	10.1	...
Nova Scotia	18.1	...	8.7	...	21.5	...	14.0	...	4.4	...	8.3	...	9.4	...
New Brunswick	18.6	...	7.9	...	20.2	...	13.3	...	5.2	...	8.6	...	10.7	...
Quebec	16.3	...	6.7	...	21.7	...	15.6	...	3.7	...	7.8	...	9.6	...
Ontario	17.3	...	7.6	...	19.0	...	14.5	...	1.7	...	8.5	...	9.7	...
Manitoba	17.9	...	8.1	...	20.8	...	13.1	...	2.3	...	8.5	...	9.8	...
Saskatchewan	19.0	...	7.8	...	25.7	...	17.3	...	1.6	...	8.1	...	11.2	...
Alberta	19.8	...	6.5	...	20.1	...	14.5	...	2.7	...	8.9	...	13.3	...
British Columbia	16.8	...	8.4	...	19.6	...	13.2	...	3.3	...	8.4	...	8.4	...
Yukon Territory	24.7	...	5.6	...	29.7	...	21.6	...	—	...	11.3	...	19.1	...
Northwest Territories	41.9	...	7.4	...	64.7	...	30.8	...	—	...	7.3	...	34.5	...
Chile	30.9[5]	4	9.5[5]	14	101.9[6]	30	37.7[7]	26	27.6[5]	27	7.1[5]	22	21.4[5]	4
Denmark	15.3	28	9.7	18	15.8[5]	6	12.1[5]	6	2.1[5]	3	8.6[6]	9	5.6	25
England and Wales	16.9	24	11.9	26	18.3	9	12.4	8	2.4	5	8.4	10	5.0	26
Finland	16.0	27	9.6	15	14.0	3	11.9[6]	5	3.1[6]	13	8.7	7	6.4	22
France	16.8	25	11.0	24	20.4	11	14.5[5]	13	3.2[5]	14	7.2	20	5.8	24
Germany, Federal Republic of	16.1	26	11.9	26	22.8	17	17.6	18	6.5[6]	20	7.3	19	4.2	27
India[8]	20.8[9]	9	8.2[9]	6	72.8[9]	29	..	..	..	..	..	..	12.6[9]	7
Ireland	20.9	8	11.3	25	20.8	12	14.0	12	3.6	15	6.5	27	9.6	16
Italy	17.6	17	10.1	21	32.2	23	21.9[9]	21	7.4[6]	22	7.1	22	7.5	21
Japan	19.4[5]	13	6.8[5]	2	15.0[5]	5	10.0[5]	1	7.0[5]	21	9.5[5]	3	12.6[5]	7
Mexico	43.5	1	9.6	15	63.1[5]	28	23.6[5]	22	15.1[5]	26	7.0	25	33.9	2
Netherlands	18.6	15	8.2	6	13.6	2	10.4	3	2.6[5]	6	9.2	4	10.4	13
New Zealand	22.6	6	8.9	11	18.7	10	11.2[5]	4	2.3[5]	4	8.7	7	13.7	6
Northern Ireland	22.1	7	10.6	23	24.0	18	15.7	15	2.7	8	7.5	17	11.5	10
Norway	17.6	17	9.7	18	14.6[6]	4	12.1[7]	6	2.6[5]	6	7.7	15	7.9	18
Peru	31.9[5]	3	7.6[5]	4	61.9[5]	27	..	..	..	..	4.3[6]	29	24.3[5]	3
Portugal	20.6	10	10.0	20	61.3	25	25.2[5]	24	8.3[5]	23	8.1	14	10.6	12
Scotland	18.3	16	12.2	28	20.8	12	13.3	11	1.4	1	8.4	10	6.1	23
Spain	20.4	11	8.7	9	24.2[10]	19	..	..	4.9[6]	19	7.1	22	11.7	9
Sweden	14.3	30	10.4	22	12.9[5]	1	10.3[6]	2	1.4[5]	1	6.6	26	3.9	29
Switzerland	17.1	23	9.3	13	15.9	7	13.1[6]	10	4.1[6]	18	7.4	18	7.8	19
South Africa (Whites)	22.8[6]	5	8.7[6]	9	29.2[7]	22	18.5[11]	20	4.0[6]	16	9.7[7]	2	14.1[6]	5
Union of Soviet Socialist Republics	17.3	21	7.7	5	26.5	21	..	..	..	..	9.0[5]	5	9.6	16
United States	17.4	20	9.6	15	21.7	15	15.8	16	2.7	8	10.3	1	7.8	19
Venezuela	43.4[5]	2	6.6[5]	1	42.6[5]	24	24.9[9]	23	9.3[5]	24	5.6[5]	28	36.8[5]	1
Yugoslavia	18.9	14	8.6	8	61.4[5]	26	30.4[7]	25	10.5[6]	25	8.4	10	10.3	14

[1] Under 28 days unless otherwise stated. [2] Per 1,000 population. [3] Per 1,000 live births. [4] Per 10,000 live births. [5] 1967. [6] 1966.
[7] 1965. [8] Registration area only. [9] 1964. [10] Excluding children born alive but dead before registration of their birth. [11] 1962.

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

Many significant developments took place in the health and welfare fields during 1969 and the first half of 1970. One of the most noteworthy was the completion of the reports of the Task Force on the Cost of Health Services in Canada. These reports contain almost 400 recommendations on methods to restrain the rate of increase in health service costs while maintaining and improving the quality of care, many of which will be implemented by the federal and provincial health departments.

* Except where otherwise indicated, this Chapter was prepared (August 1970) by the Research and Statistics Directorate of the Department of National Health and Welfare, Ottawa.

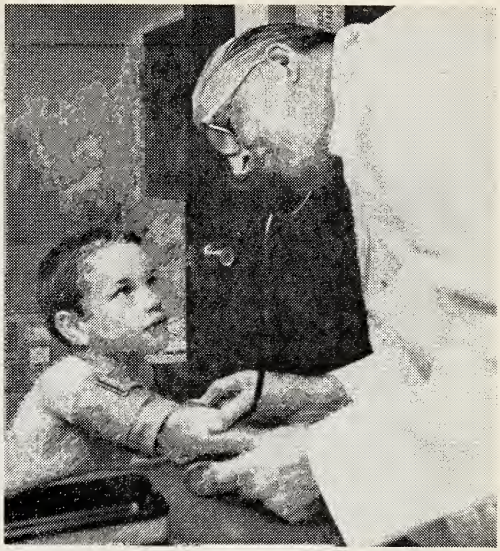
Since the July 1, 1968 inception of federal Medical Care Insurance Pro- n in which Saskatchewan and British umbia were the original participating vinces, the provinces of Manitoba, vfoundland, Nova Scotia, Alberta and ario had entered the plan by mid-1970 the other three reported their inten- of entering by the end of 1970.

Because of increasing concern over detrimental effects of DDT on the ironment and its potential hazard to lth, the Food and Drug Directorate of Department of National Health and lfare restricted the use of this chemical, ove intended to reduce the residue level improve the environment for fish and e as well as for humans. The use of lamates in beverages, dietetic desserts, iatric drugs, and dietetic canned fruits eing phased out because of their pos- e carcinogenic properties. The use of lamates will be allowed only under e medical supervision.

The growing problem of environ- ital pollution has resulted in additional vities for the Department, such as the ing up of national standards for drink- water quality to assist provincial and nicipal authorities in providing greater tection for drinking water supplies. ew Air Pollution Control Division is nitoring air pollution and will set ndards for emission of pollutants.

Activity to reduce the smoking of acco products by Canadians continued. rmation, advertisements and legisla- proposals have been developed by the partment to make citizens aware of the gers of smoking and to reduce the nber of children taking up smoking. lication of the tar and nicotine content arious brands of cigarettes was one of most significant events to date. islative proposals introduced in 1968 rding advertising and levels for tars nicotine are still being considered.

As a result of a survey of radiation n colour television sets, legislation was pared for the control of radiation from adiation-emitting appliances including vision sets, lasers, microwave ovens microwave dryers.



A four-year national survey of nutrition, unprecedented in its scope, is being conducted by the Department of National Health and Welfare. In clinics established in five regions across the country, medical technicians and interviewers will carry out physical examinations and record dietary habits.

The interim report of the Committee of Inquiry into the Non-medical Use of Drugs was tabled in the House of Commons. It recommends that research be continued into the social and pharmacological effects of marihuana and that adequate treatment facilities be provided for persons using drugs. The necessity of more information being disseminated was stressed, and it was suggested that young people play a major role in drug education. The report recommends that the use of marihuana be controlled through the Food and Drugs Act rather than the Narcotic Control Act, and that changes be made in the handling of convictions.

The Department of National Health and Welfare will begin a National Survey of Nutrition in September 1970, based on the experience of a trial survey previously undertaken in the Ontario town of Burlington. The objective of the survey is to provide basic information on the nutritional well-being of Canadians for the planning of public health programs and for the further development of the food and drug regulations. It will estimate the incidence of nutritional diseases and disorders in groups of the Canadian population, characterized by such factors as geographical location, type of community, income level, and the age and sex of individuals. It will also identify the types of foods and estimate the quantity normally ingested by individuals in order to determine the levels of ingestion of nutrients, food additives, non-nutritive substances and pesticide residues.

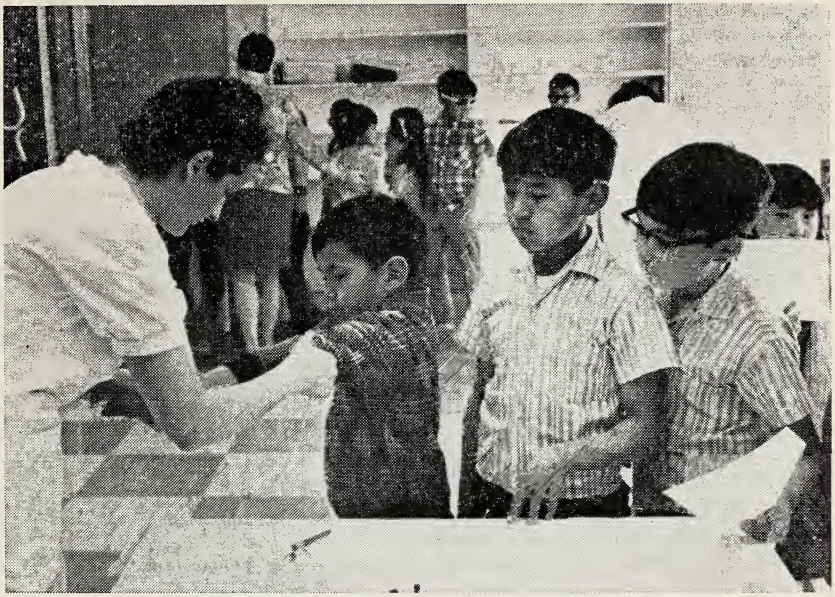
In 1969 the National Council of Welfare, an advisory body to the Minister of National Health and Welfare, was reconstituted as a citizens' advisory council, almost half of the membership of which is composed of representatives of low-income or disadvantaged minority-group organizations. A Division has been established within the Department to act as a secretariat for the Council and to provide a continuing liaison between it and these low-income groups. The Department of National Health and Welfare submitted a brief to the Committee on Poverty in February 1970, describing departmental policies against poverty and the role of the Department in providing care, or assisting in the provision of care, to the population as a whole and to groups in society.

Old age security pensions were again increased by 2 p.c., as the DBS consumer price index continued to rise. The monthly pension in 1970 was $79.58 and, combined with the guaranteed income supplement, monthly payments to each pensioner entitled to the latter totalled $111.41. On Jan. 1, 1970, benefits became available at age 65 compared to age 66 during 1969, completing the year-by-year progressive reduction of the age of pensioner from 70 to 65. Under the Canada and Quebec Pension Plans, benefits also became available to persons retiring at age 65 or over. These benefits were increased to a maximum of a little over $43 a month; they become payable at their full rate in 1976. Survivors', dependants', and disability pensions were also increased. As of December 1969, about 170,000 persons were receiving benefits under these two Plans.

The Department of National Health and Welfare in mid-1970 was in process of preparing a White Paper on Social Security, to outline proposed programs for low-income and disadvantaged persons in Canada. The White Paper is expected to be released late in the year. (See Appendix III.)

PART I.—HEALTH

Provincial governments bear the major responsibility for health services in Canada, with the municipality often assuming considerable authority over matters delegated to it by provincial legislation. The Federal Government has jurisdiction over a number of health matters of a national character and provides important financial assistance to provincial health and hospital services. All levels of government are aided and supported by a network of voluntary agencies working in different health fields.



School children in an immunization clinic at Inuvik, N.W.T. Health measures carried out by the Department of National Health and Welfare across Canada include immunization against diphtheria, whooping cough, tetanus, poliomyelitis and measles as well as vaccination for smallpox and tuberculosis.

Section 1.—Federal Health Activities

The Department of National Health and Welfare is the chief federal agency in health matters but important treatment programs are also administered by the Departments of Veterans Affairs and National Defence. The Dominion Bureau of Statistics is responsible for collection, analysis and publication of national health statistics, the Medical Research Council and the Defence Research Board administer medical research programs, and the Canada Department of Agriculture has certain health responsibilities connected with food production.

The Department of National Health and Welfare has both a direct role in health activities and a supportive role to the provinces. Direct health care activities are concentrated mainly in the Medical Services Branch of the Department, which provides health services to Indians and Eskimos, operates quarantine and immigration medical services, administers the civil aviation medical program for the Ministry of Transport, and provides medical counselling and emergency medical service to federal civil servants. The Food and Drug Directorate is also actively involved in health care by maintaining surveillance over the manufacture, advertising, packaging and distribution of foods, drugs, cosmetics and medical devices, as well as by performing research in respect to standards for these items.

Advisory services, co-ordination of programs, and liaison activities with the provinces are provided by the Health Services Branch in the areas of child and maternal health, dental health, epidemiology, mental health, nutrition, health education, smoking and health, rehabilitation, and emergency health services. Standards are also set in this Branch for clinical laboratory services, biological products, levels for radiation, and envi-

ronmental pollution. Financial support to the provinces on a cost-sharing basis for hospital and medical insurance and health resources is provided by the Health Insurance and Resources Branch.

Co-ordination with the provinces on health matters is facilitated by the Dominion Council of Health, the principal advisory agency to the Minister of National Health and Welfare. Its membership includes the Deputy Minister of National Health, who acts as chairman, the chief health officer of each province, and five appointees of the Governor in Council. The Council meets semi-annually. Federal-provincial technical advisory committees of the Council deal with specific aspects of health.

Subsection 1.—Public Medical Care

The expression "medicare" is commonly used in referring to the federal Medical Care Insurance Program. This Program, established under the Medical Care Act, has permitted the Federal Government, since July 1, 1968, to contribute one half of the national cost of insured services to those provinces operating medical care insurance plans that meet certain minimum criteria. Two provinces—British Columbia and Saskatchewan—became participants in the federal plan at its inception. Manitoba, Nova Scotia and Newfoundland entered on Apr. 1, 1969, and Alberta and Ontario on July 1 and Oct. 1, respectively, of the same year. Specifically, the Federal Government contributes to any one participating province one half of the per capita cost of all insured services furnished under the plans of all participating provinces, multiplied by the number of insured persons in that one province. The minimum criteria that must be met are as follows.

(1) *Comprehensive coverage* must be provided for all medically required services rendered by a physician or surgeon. There can be no dollar limit or exclusion except on the ground that the service was not medically required. The federal program includes not only those services that have been traditionally covered as benefits to a greater or lesser extent by the health insurance industry, but also preventive and curative services that have been traditionally covered through the public sector in each province; for example, the medical care of patients in mental and tuberculosis hospitals and those services of a preventive nature provided to individuals by physicians in public health agencies.

(2) The plan must be *universally available* to all eligible residents on equal terms and conditions and cover at least 90 p.c. of the total eligible provincial population at the outset of the program and at least 95 p.c. after Apr. 1, 1971. This "uniform terms and conditions" clause is intended to ensure that all residents have access to coverage and to prevent discrimination in premiums on account of previous health, age, non-membership in a group, or other considerations. If a premium system of financing is selected, subsidization in whole or in part for low-income groups is permitted. It has been left to the individual province to determine whether its residents should be insured on a voluntary or compulsory basis. Utilization charges at the time of service are not precluded by the federal legislation if they do not impede, either by their amount or by the manner of their application, reasonable access to necessary medical care, particularly for low-income groups.

(3) The plan must provide *portability* of benefit coverage when the insured resident who has paid his premiums, if any, is temporarily absent from the province and when moving residence to another participating province.

(4) The provincial medical care insurance plan must be administered on *a non-profit basis by a public authority* that is accountable to the provincial government for its financial transactions. It is permissible for provinces to assign certain administrative functions to private agencies.

The above four criteria leave each province with substantial flexibility in determining the administrative arrangements for the operation of its medical care insurance plan and in choosing the way in which its plan will be financed, e.g., through premiums, sales tax, other provincial revenues, or by a combination of methods.

In addition to the comprehensive physicians' services that must be provided as insured benefits by participating provinces, the Medical Care Act empowers the Federal Government to include any additional health services under terms and conditions specified by the Governor in Council. So far, such additional services are limited to certain procedures carried out by dental surgeons in a hospital setting.

Provincial programs that provide health care services (apart from those already insured under the Medical Care Act) for welfare recipients establishing eligibility on the basis of financial need are supported financially by the federal program known as the Canada Assistance Plan. This program (p. 383) provides for federal payment of one half of the cost of personal health care services, as well as welfare services. The provinces are free to make available a wide range of health care benefits.

Subsection 2.—Health Resources Program

The Health Resources Program is concerned with manpower in the health fields necessary for the provision of comprehensive health services to Canadians. Under the program the Federal Government provides capital grants for teaching and research establishments, undertakes studies on health manpower, and offers advice and consultation.

The capital-grant aspect of the program was inaugurated when in July 1966 Parliament passed the Health Resources Fund Act, which was established to develop resources for the training of personnel in order to reduce shortages and to meet the increase in demand likely to follow the introduction of medical care insurance. The Act established a fund of $500,000,000, available over the period 1966-80. Out of this fund the Government will pay up to 50 p.c. of the cost of planning, construction, purchase, renovation and basic equipment of teaching hospitals, medical schools, training facilities for nurses and other health professionals, and research establishments; the costs of land, interest and residential buildings are excluded. Of the $500,000,000, $300,000,000 is available to the provinces in proportion to their populations and $25,000,000 is available to the Atlantic Provinces for joint projects in which all four provinces participate; the remaining $175,000,000 is yet to be allocated. By Mar. 31, 1970, the Government had approved contributions of $160,000,000 and paid out $106,000,000—about two thirds for training facilities and one third for research establishments.

The Department provides technical and professional advice and consults with officials of provincial governments and other agencies concerned with the development of health resources in Canada, and supports programs to increase the effectiveness of health manpower. These activities are undertaken to ensure the economical and efficient use of the Health Resources Fund.

Subsection 3.—National Health Grant Program

The National Health Grant Program was instituted in 1948 to assist the provinces in extending and improving public health and hospital services. As provincial needs altered, changes were made in the amounts and conditions of individual grants. Table 1 shows the utilization of the General Health Grants and Hospital Construction Grants and changes in their classification since inception, and the current grants, as follows: Professional Training, Hospital Construction, Mental Health, Tuberculosis Control, Public Health Research, General Public Health, Cancer Control, Medical Rehabilitation and Crippled Children, and Child and Maternal Health. During the period 1948-70, the total expenditures under this program were $900,000,000.

The largest single grant has been in support of hospital construction. This grant was terminated on Mar. 31, 1970, and lump sum cash payments were made to the provinces and territories in discharge of the full entitlement of each province and territory to the termination date of the grant. During the life of this grant, funds were approved to assist with the construction of space to house more than 130,200 beds and 16,000 bassinets, for more than 24,300 beds for nurses, 971 beds for interns and about 8,315,000 sq. feet of floor area for certain services used by both in-patients and out-patients. The second largest grant, the General Public Health Grant, has assisted the provinces in extending local health services for the prevention of disease and disability, in controlling environmental health hazards, and in developing a great variety of health services. Since 1948

more than 53,700 health personnel have received assistance in taking training in the health disciplines. Other grants are designated for preventive and treatment services in specific areas, such as mental health, tuberculosis and cancer, maternal and child care, and medical rehabilitation.

Projects supported by the Public Health Research Grant relate to the prevention of disease, disability or death; epidemiology; community health and medical care; operational research; environmental health, including sanitation; and the utilization of health manpower.

In April 1969, a new National Health Grant was established to stimulate research studies, service demonstrations and training activities of national importance for the improvement of health services. Eligible applicants may be official or voluntary health agencies, universities, or other qualified agencies or individuals. In 1969-70, the amount allocated was $1,062,000 on the basis of five cents per capita of population; in 1970-71, it was increased to $2,300,000 on the basis of 10 cents per capita. Unlike its predecessor, which was a joint federal-provincial program, the National Health Grant is federally administered.

The Government has indicated its intention of terminating the General Health Grants, except for the Professional Training and Public Health Research grants, by the end of March 1972. The amounts available to the provinces are being gradually reduced, the first reduction having taken place in 1969-70 and the second in 1970-71.

1.—Amounts Allocated and Amounts and Percentages Expended under the General Health Grants and Hospital Construction Grants, by Grant, for the Period Ended Mar. 31, 1969, and for the Year Ended Mar. 31, 1970.

Grant	May 14, 1948—Mar. 31, 1969			Year Ended Mar. 31, 1970	
	Amount Allocated[1]	Amount Expended[2]	Percentage Expended	Amount Allocated[1]	Amount Expended[2,3]
	$	$		$	$
Crippled Children[4]	6,207,728	4,431,677	71	—	—
Professional Training	23,467,773	23,238,217	99	2,074,400	2,178,604
Hospital Construction[5]	313,521,092	280,830,235	92	20,367,320	44,167,029
Venereal Disease Control[6]	5,968,336	5,146,209	86	—	—
Mental Health	154,158,969	133,695,502	86	6,103,395	6,221,674
Tuberculosis Control	73,853,829	70,138,688	94	1,356,309	1,389,736
Public Health Research	32,416,408	28,820,176	88	4,771,120	3,941,955
Health Survey[7]	645,180	540,960	83	—	—
General Public Health	222,996,666	175,688,177	78	11,788,990	13,083,908
Cancer Control	68,030,367	50,220,603	73	1,356,309	1,172,001
Laboratory and Radiological Services[8]	47,404,300	14,450,881	30	—	—
Medical Rehabilitation[9]	6,500,000	3,016,750	46	—	—
Medical Rehabilitation and Crippled Children[10]	25,152,895	16,656,055	66	2,093,458	1,310,762
Child and Maternal Health[11]	27,897,194	19,345,240	69	1,356,309	700,760
Totals	**1,008,220,737**	**826,219,370**	**81**	**51,267,610**	**74,166,429**

[1] As set out in the Orders in Council authorizing the General Health Grants and Hospital Construction Gran for the years cited. Provinces may vary the amounts allocated for individual General Health Grants by transf of unexpended funds from one Grant to another. [2] Total expenditures for each Grant for all provinces includi Quebec's share, which has been paid through tax rebate under the Established Programs (Interim Arrangement Act, effective 1965-66. [3] Because of grant transfer of funds between grants, expenditures can exceed amoun allocated. [4] Merged with the Medical Rehabilitation Grant, Apr. 1, 1960. [5] The amounts allocate exclude, whereas the amounts expended for 1969-70 include, re-votes for unclaimed allocations as from Apr. 1, 195 [6] Absorbed into the General Public Health Grant, Apr. 1, 1960. [7] Lapsed in 1953 following the completion provincial health surveys. [8] Introduced in 1953 and absorbed into the General Public Health Grant, Apr. 1960. [9] Introduced in 1953 and merged with the Crippled Children Grant, Apr. 1, 1960. [10] From 19 only; see footnotes [4] and [9]. [11] Introduced in 1953.

Subsection 4.—Hospital Insurance

Provincial hospital insurance programs, operating in all provinces and territories since 1961, cover 99 p.c. of the population of Canada. Under the Hospital Insurance and Diagnostic Services Act of 1957, the Federal Government shares with the provinces the cost of providing specified hospital services to patients insured by these programs. Specifically excluded are tuberculosis hospitals and sanatoria, hospitals or institutions for the mentally ill, and institutions providing custodial care, such as nursing homes and homes for the aged. The methods of administering and financing the program in each province and the provision of services above the stipulated minimum required by the Act are left to the choice of the province.

Insured in-patient services must include accommodation, meals, necessary nursing service, diagnostic procedures, pharmaceuticals, the use of operating rooms, case rooms, anaesthetic facilities, and the use of radiotherapy and physiotherapy if available. Similar out-patient services may be included in provincial plans and authorized for contribution under the Act. All provinces include some out-patient services. The provincial plans are administered by the provincial department of health in some provinces and by a separate commission in others. To finance the plans, the provinces use general revenue, sales taxes and premiums in various combinations.* The Federal Government contributes, out of the consolidated revenue fund in respect to each province, 25 p.c. of the per capita cost of in-patient services in Canada and 25 p.c. of the per capita cost of in-patient services in the province, multiplied by the average number of insured persons in that province. Thus, the total contribution is about 50 p.c. of the shareable cost for all Canada, but the proportion is higher for provinces where the per capita cost is below average and lower for the other provinces. Contributions for insured out-patient services with respect to each province are paid in the same proportion as the contributions to the cost for in-patients.

For 1969, the Federal Government made the following advance payments, totalling $601,640,060: Newfoundland $19,708,098, Prince Edward Island $3,878,884, Nova Scotia $30,413,984, New Brunswick $23,793,308, Ontario $304,638,023, Manitoba $38,767,364, Saskatchewan $37,369,056, Alberta $64,928,312, British Columbia $76,328,079, Yukon Territory $553,411, and the Northwest Territories $1,261,541.†

Tables **2** and **3** show data for the hospitals listed in hospital insurance agreements for 1968. The 1,279 hospitals had a total of 143,679 beds set up at the end of the year, or 6.9 beds per 1,000 population. The rate of patient-days per 1,000 population was 2,039 for Canada and ranged from 1,582 in the Yukon Territory to 2,490 in Alberta.

* Newfoundland, Prince Edward Island, New Brunswick, Quebec and Yukon Territory use general revenue only. Nova Scotia uses general revenue and sales tax. Ontario and Manitoba use general revenue and premiums. Saskatchewan uses general revenue, premiums and a daily service charge. Alberta uses general revenue, premiums and a service registration charge. British Columbia and the Northwest Territories use general revenue and a daily service charge.

† On Jan. 1, 1965, contributions to Quebec under the Hospital Insurance and Diagnostic Services Act were discontinued and replaced by arrangements under the Established Programs (Interim Arrangements) Act.

2.—Number of Beds in Hospitals Listed in Hospital Insurance Agreements, with Rates per 1,000 Population, by Province, as at Dec. 31, 1968

Province	No. of Hospitals Reporting	Beds		Province or Territory	No. of Hospitals Reporting	Beds	
		Number	Rate[1]			Number	Rate[1]
Newfoundland	47	2,916	5.8	Saskatchewan	156	7,801	8.1
Prince Edward Island	9	646	5.9	Alberta	155	13,985	9.2
Nova Scotia	48	4,930	6.5	British Columbia	116	13,309	6.6
New Brunswick	41	4,393	7.0	Yukon Territory	5	161	10.7
Quebec	268	38,508	6.5	Northwest Territories	29	444	14.3
Ontario	305	49,592	6.8				
Manitoba	100	6,994	7.2	**Canada**	**1,279**	**143,679**	**6.9**

[1] Per 1,000 population; based on population estimates as at Dec. 31, 1968.

3.—Total Patient-Days and Insured Patient-Days in Hospitals Listed in Hospital Insurance Agreements, with Rates per 1,000 Population, by Province, 1968

Province or Territory	No. of Hospitals Reporting	Total Patient-Days		Patient-Days Paid For by the Insurance Plan of the Reporting Province	
		Number	Rate[1]	Number	Rate[2]
Newfoundland	47	823,790	1,624.8	769,350	1,520
Prince Edward Island	9	186,592	1,696.3	179,775	1,665
Nova Scotia	48	1,392,028	1,831.6	1,262,516	1,701
New Brunswick	41	1,279,966	2,051.2	1,178,141	1,909
Quebec	268	11,464,912	1,934.4	10,922,764	1,847
Ontario	305	15,104,012	2,067.3	13,817,217	1,946
Manitoba	100	2,002,152	2,061.9	1,813,549	1,887
Saskatchewan	156	2,093,924	2,181.2	2,012,301	2,105
Alberta	155	3,800,188	2,490.3	3,561,827	2,349
British Columbia	116	4,052,559	2,019.2	3,654,843	1,833
Yukon Territory	5	23,735	1,582.3	18,990	1,266
Northwest Territories	29	63,037	2,033.4	42,456	1,415
Canada	**1,279**	**42,286,895**	**2,038.5**	**39,233,729**	**1,918**

[1] Per 1,000 population; based on population estimates as at June 1, 1968. [2] Per 1,000 persons insured under provincial plans.

Table 4 shows the expenditures of budget review hospitals. They exclude capital costs, but include expenditures for services not covered by hospital insurance plans. The expenditures increased in 1968 by 16 p.c. over the preceding year to $1,722,497,386, of which salaries accounted for two thirds.

Provincial per capita expenditures shown in the table are influenced by the percentage of services provided by budget review hospitals (over 90 per cent nationally but varying provincially) as well as by differences in hospital utilization, particularly in the amount of care provided for chronic patients.

4.—Revenue Fund Expenditures of Budget Review Hospitals, by Type of Account and by Province, 1968

Province or Territory	Salaries and Wages	Medical and Surgical Supplies	Drugs	Food	Other Expenses[1]	Total
	Amounts of Expenditures					
	$'000	$'000	$'000	$'000	$'000	$'000
Newfoundland	21,146	1,340	1,626	1,912	10,799	36,824
Prince Edward Island	3,568	185	230	322	1,596	5,900
Nova Scotia	34,035	1,608	1,800	2,675	17,005	57,124
New Brunswick	29,858	1,689	1,597	2,239	12,151	47,534
Quebec	349,679	15,717	17,317	19,155	93,382	495,250
Ontario	434,697	19,062	20,020	23,619	155,403	652,801
Manitoba	48,500	2,507	2,773	2,890	16,224	72,894
Saskatchewan	47,755	2,399	2,654	3,175	18,115	74,098
Alberta	85,725	3,642	4,087	6,551	32,992	132,997
British Columbia	101,820	4,691	4,631	6,229	28,822	146,193
Yukon Territory	125	6	15	8	69	222
Northwest Territories	389	29	18	40	185	661
Canada[2]	**1,157,297**	**52,876**	**56,768**	**68,814**	**386,742**	**1,722,497**

For footnotes, see end of table.

4.—Revenue Fund Expenditures of Budget Review Hospitals, by Type of Account and by Province, 1968—concluded

Province or Territory	Salaries and Wages	Medical and Surgical Supplies	Drugs	Food	Other Expenses[1]	Total
	Expenditures per Patient-Day[2]					
	$	$	$	$	$	$
Newfoundland	25.78	1.63	1.98	2.33	13.17	44.90
Prince Edward Island	19.12	0.99	1.23	1.72	8.55	31.62
Nova Scotia	26.93	1.27	1.42	2.12	13.46	45.20
New Brunswick	24.90	1.41	1.33	1.87	10.13	39.63
Quebec	35.34	1.59	1.75	1.94	9.44	50.05
Ontario	31.40	1.38	1.45	1.70	11.22	47.15
Manitoba	26.54	1.37	1.52	1.58	8.87	39.88
Saskatchewan	24.54	1.23	1.36	1.63	9.30	38.07
Alberta	24.15	1.03	1.15	1.84	9.30	37.47
British Columbia	28.52	1.31	1.30	1.74	8.08	40.95
Yukon Territory	50.72	2.23	5.87	3.09	27.96	89.87
Northwest Territories	24.19	1.83	1.15	2.48	11.50	41.15
Canada	**30.36**	**1.39**	**1.49**	**1.80**	**10.14**	**45.18**
	Expenditures per Capita[3]					
	$	$	$	$	$	$
Newfoundland	41.71	2.64	3.21	3.77	21.30	72.63
Prince Edward Island	32.43	1.67	2.09	2.93	14.51	53.64
Nova Scotia	44.78	2.12	2.37	3.52	22.37	75.16
New Brunswick	47.85	2.71	2.56	3.59	19.47	76.18
Quebec	59.00	2.65	2.92	3.23	15.75	83.56
Ontario	59.50	2.61	2.74	3.23	21.27	89.35
Manitoba	49.95	2.58	2.86	2.98	16.71	75.07
Saskatchewan	49.74	2.50	2.76	3.31	18.87	77.19
Alberta	56.18	2.39	2.68	4.29	21.61	87.15
British Columbia	50.73	2.34	2.31	3.10	14.36	72.84
Yukon Territory	8.35	0.37	0.97	0.51	4.60	14.80
Northwest Territories	12.54	0.95	0.60	1.29	5.96	21.33
Canada	**55.79**	**2.55**	**2.74**	**3.32**	**18.64**	**83.03**
	Percentage Distribution					
Newfoundland	57.4	3.6	4.4	5.2	29.3	100.0
Prince Edward Island	60.5	3.1	3.9	5.4	27.1	100.0
Nova Scotia	59.6	2.8	3.1	4.7	29.8	100.0
New Brunswick	62.8	3.5	3.4	4.7	25.6	100.0
Quebec	70.6	3.2	3.5	3.9	18.8	100.0
Ontario	66.6	2.9	3.1	3.6	23.8	100.0
Manitoba	66.5	3.4	3.8	4.0	22.3	100.0
Saskatchewan	64.4	3.2	3.6	4.3	24.5	100.0
Alberta	64.5	2.7	3.1	4.9	24.8	100.0
British Columbia	69.6	3.2	3.2	4.3	19.7	100.0
Yukon Territory	56.4	2.5	6.5	3.4	31.1	100.0
Northwest Territories	58.8	4.4	2.8	6.0	27.9	100.0
Canada	**67.2**	**3.1**	**3.3**	**4.0**	**22.4**	**100.0**

[1] Includes other supplies, electricity, maintenance services, repairs, interest, depreciation, rent, etc. [2] Excludes newborn. [3] Based on population estimates as at June 1, 1968.

Subsection 5.—Food and Drug Control

The provisions of the Food and Drugs Act, administered by the Food and Drug Directorate of the Department of National Health and Welfare, apply to the manufacture, advertising, packaging and distribution of foods, drugs, cosmetics and medical devices anywhere in Canada. Powers are given under this legislation to maintain the safety, purity and quality of food and drug products and to prevent misrepresentation in labelling and advertising. The Act specifically prohibits the advertising of any food, drug, cosmetic or medical device as a preventive or cure for a number of serious diseases. This feature of the Act is thought to be unique to Canada and it has proven valuable in the prevention of fraud.

Standards of safety and purity are developed through laboratory research and maintained by means of a regular and widespread inspection. The inspection of food-manufacturing establishments plays a major role in the production of clean, wholesome foods containing ingredients that meet recognized standards. The Food and Drug Regulations list chemical additives that may be used in foods, the amounts that may be added to each food, and the underlying reason. Information on new additives must be submitted for careful review before they are included in the permitted list. Considerable emphasis is placed upon studies to ensure that the levels of pesticide residues in foods do not constitute a health hazard. The effect of new packaging and processing techniques on the bacteria associated with food spoilage is also of special concern.

Both the manufacture and distribution of drugs in Canada are regulated by the Food and Drug Directorate. The conditions under which drugs are to be manufactured are described in the Manufacturing Facilities and Control Regulations. They relate to facilities, employment of qualified personnel, quality control procedures, maintenance of records and a suitable system to enable a complete and rapid recall of any batch of drugs from the market. Pharmaceutical plants are regularly visited by inspectors to ensure that the drugs produced are of a suitable quality to be sold in Canada. Control over the distribution of drugs is based on the relative safety of a drug and its potential for abuse. Accordingly, there are different levels of control. Since 1966, every manufacturer and distributor of drugs in Canada has been required to submit to the Directorate information on all the products he is marketing in Canada. From this and other information, decisions are made regarding the types of control procedure that will be implemented.

A limited number of drugs in specified dosage ranges may be sold through any outlet under the Patent and Proprietary Medicines Act. Registration under this Act allows a manufacturer to sell secret formula preparations and make limited claims for the product. Most drug products, however, are limited to sale on prescription and are usually dispensed to patients through a pharmacy. Narcotics and controlled drugs are closely regulated and detailed records kept of all transactions involved in the legitimate use of these products. The illicit market in narcotics and similar products is the responsibility of the Royal Canadian Mounted Police and other law-enforcement agencies. Close co-operation is maintained between these agencies and the Food and Drug Directorate.

When new drugs with unknown properties are to be placed on the market, detailed information is demanded of the manufacturer. This information includes data on adverse side effects, the manufacturing process to be used, the results of the drug in clinical tests and the formulation of the dosage forms. The data are carefully reviewed by the Directorate to ensure that the drug is safe and that it is effective for the purpose claimed. Even after the drug is marketed the Directorate maintains a close watch over the side effects encountered in practice. If it proves to be relatively safe and effective it is no longer classed as a new drug, but if it appears that it might be unsafe the manufacturer would be asked to remove it from the market. The Directorate conducts an adverse-drug-reaction reporting program across Canada to recognize and investigate reactions to drugs. The co-operation of the medical, dental, veterinary and pharmaceutical professions is also solicited in advising the Directorate of such reactions in private practice.

Subsection 6.—Medical Services

Through its Medical Services Branch, the Department of National Health and Welfare provides several direct and indirect types of medical service, as described in the following paragraphs. "Indirect" services are provided by hiring local services where practicable.

Indians and Eskimos.—Medical and public health services are made available to registered Indians and Eskimos who are not included under provincial arrangements and who are unable to provide for themselves. Much of the service in treatment and health education is rendered to the patients through 46 departmental out-patient clinics and 91 health centres staffed by medical and other public health personnel. In remote areas, the key facility is frequently the departmental nursing station, a combined emergency treatment and public health unit usually having two to four beds under the direction of one or two nurses; 57 of these are operated throughout Canada.

Where practicable, there has been considerable integration of Indians in provincial and municipal health agencies, so that the number of hospitals and other facilities provided specifically for them have been reduced accordingly. In 1970, the Department maintained 13 hospitals at strategic points and co-operated elsewhere with community, mission or company hospitals. Indians are included under all provincial prepaid insurance plans for hospital care and other forms of medical care. Indian and Eskimo health workers are trained to give instruction in health care and sanitation.

Northern Health.—Because of the special problems in developing health services in the Far North, the Department has been given the responsibility of co-ordinating federal and territorial health care for all residents. In so doing, it undertakes the functions of a health department for the Council of the Northwest Territories and assists the Government of the Yukon Territory in the provision of certain health services. Hospital insurance plans are in effect in both territories.

In the Yukon, services for the total population, administered through the Commissioner for the Yukon and provided on a cost-sharing basis with the Department of National Health and Welfare, include complete treatment for tuberculosis, payment for services rendered at Alberta cancer clinics, mental hospital care through arrangements with the Province of British Columbia, and medical care for indigent patients. Public health nursing services, measures for the control of communicable diseases, and administration of the principal public hospital are primarily the responsibility of the Department.

Similar services are provided in the Northwest Territories with costs shared between the territorial government and the federal Departments of National Health and Welfare and of Indian Affairs and Northern Development.

Other Medical Services.—As of mid-1970, compulsorily prepaid medical, surgical, hospital and other treatment services are provided for crew members of all foreign-going ships arriving in Canada and Canadian coastal vessels in interprovincial trade, and medical, surgical and other treatment prepaid on an elective basis is available to crew members of Canadian fishing vessels. (Canadian seamen obtain their hospital care under the provincial hospital insurance plans.) A medical service is also provided for the Canadian Coast Guard.

All vessels, aircraft and other conveyances and their crews and passengers arriving in Canada from foreign countries are inspected by quarantine officers to detect and correct conditions that could lead to the entry into Canada of such diseases as smallpox, cholera, plague, yellow fever, typhus and relapsing fever. Fully organized quarantine stations are located at all major seaports and airports.

The Immigration Medical Service conducts in Canada and other countries the medical examination of all applicants for immigration to Canada and provides treatment for certain classes of persons after arrival in Canada, including immigrants who become ill en route to their destination or while seeking employment.

Health counselling is offered through Medical Services Branch units to federal employees throughout the country. This service is primarily diagnostic and advisory only but emergency treatment may also be given.

Air pilots and other air personnel are routinely examined by the Civil Aviation Medical Assessment Service for physical and mental fitness for the performance of their duties.

The Department is responsible for enforcing hygienic standards on federal property, including ports and terminals, on interprovincial means of transport and on ships and aircraft.

Subsection 7.—Medical Research

Federal Government expenditures for health sciences research are estimated at $58,500,000 for 1969-70, a substantial increase over the expenditure of $44,700,000 in 1967-68 and $53,500,000 in 1968-69. Of the total 1969-70 amount, the Medical Research Council expended $30,891,000, the Department of National Health and Welfare $27,100,000, the Department of Veterans Affairs $457,000 and the National Research Council the remainder.

The Department of National Health and Welfare accounted for most of the Federal Government intramural expenditures on research and development. An amount of $8,800,000 was so spent in 1969-70 in such fields as environmental health, pharmacology, nutrition, microbiology, pesticides, food additives, clinical laboratory procedures, radiation protection, prosthetics, epidemiology, and physical fitness. The Department of Veterans Affairs intramural expenditure was in support of a variety of clinical studies in chronic disease problems including psychiatric research, and the National Research Council conducts studies in radiation biology and other life sciences important to health.

In 1969-70, $4,400,000 was distributed under the Public Health Research Grant for applied and developmental research projects conducted by universities, hospitals, health departments and other non-profit health organizations; $1,062,000 under the newly established National Health Grant; $143,000 for physiological research under the Fitness and Amateur Sport Grant; and $61,000 for smoking and health research. It is estimated that $13,000,000 or 40 p.c. of the Health Resources Fund expenditures in 1969-70 was used to build research facilities as an integral part of the program to expand the training of health personnel at medical and dental schools and affiliated centres.

Among the voluntary agencies supporting medical research in Canada related to their special interests, the National Cancer Institute and the Canadian Arthritis and Rheumatism Society are the most active. The Interdepartmental Committee on Medical Research provides a forum for the sharing of information and support of medical research to which the voluntary agencies are invited.

The Medical Research Council.*—The Medical Research Council is the main channel through which the Federal Government provides financial support for research in the health sciences initiated and carried out in Canadian schools of medicine, pharmacy and dentistry. The first step toward a formal mechanism for the support of extramural research in the medical sciences was the establishment in 1938 of the Associate Committee for Medical Research of the National Research Council with a budget of $53,000 to be used for grants-in-aid of university research and fellowships for young doctors seeking training in research. In 1947 this Committee was superseded by a Division of Medical Research of the National Research Council, assisted by an Advisory Committee on Medical Research comprised of 11 senior investigators drawn from Canadian medical schools. In 1960, on the recommendation of a special committee set up to review extramural medical research support by the Federal Government, the Division of Medical Research was replaced by the Medical Research Council, which continued to operate within the administrative framework of the NRC but was responsible for policies affecting its own program. In 1969, with the

* Prepared by Dorothy J. Wright, Medical Research Council, Ottawa.

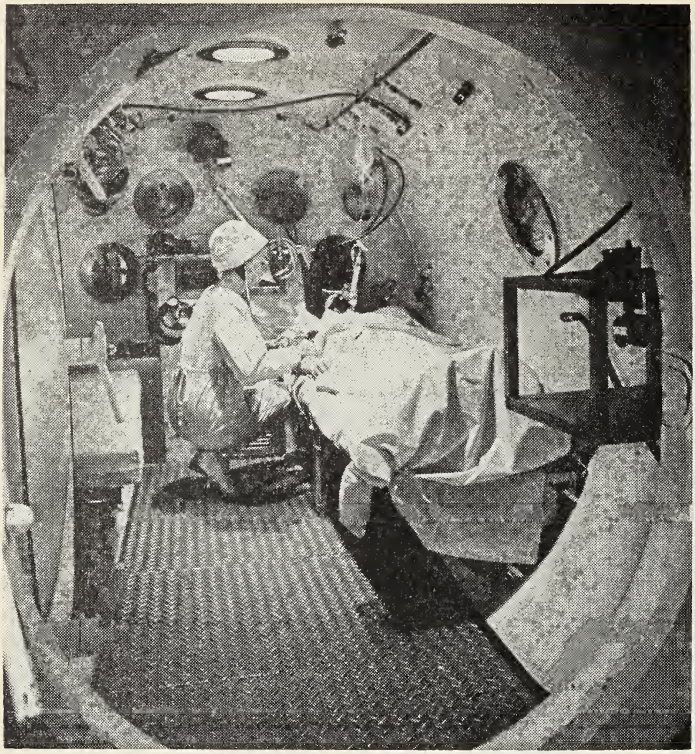
passage of the Government Organization Act, the Medical Research Council became a fully independent agency of the Federal Government, with a major responsibility for the support of extramural research not only in the medical sciences but also in the pharmaceutical and dental sciences. Throughout this entire period, funds have been made available for grants-in-aid and postdoctorate training fellowships and, latterly, salary support has been given for a limited number of highly qualified career investigators in the universities and for the pre-doctoral training of graduate students in the health sciences. Other types of research support have been evolved to encourage the development of health sciences research. The budget provided by Parliament for the Council's program in 1969-70 was $30,891,000, and an additional $380,000 for administration of the program.

The Medical Research Council (MRC) is a departmental Crown corporation (see p. 159) reporting to Parliament through the Minister of National Health and Welfare but completely separate from that Department. The Council is comprised of a full-time President appointed by the Governor in Council, and 21 other members drawn from the universities who serve without remuneration for terms of up to three years. The program is administered by a full-time secretariat of 18 scientific and administrative personnel. Under the terms of its legislation, MRC has authority "to promote, assist and undertake research in the health sciences, with the exception of public health research" (which, by statute, is the responsibility of the Department of National Health and Welfare). Its program is divided into three main sectors: the Grants Program, Personnel Support Programs, and Research Development.

The Grants Program is by far the largest component of the MRC's operation. Applications from investigators on the staff of Canadian universities and affiliated institutions are considered routinely three times a year. The basis for this consideration is peer assessment; each application is reviewed by external referees expert in the field involved and then considered by one of 15 grants committees, each comprised of eight to ten senior investigators drawn from universities, government and industry. The recommendations of these committees are then forwarded to MRC and awards are approved to the extent that funds permit. Most are made on an annual basis but, where a research program of high merit has reached a stable level of expenditure, support of a specified amount may be provided for terms of three to five years. The grants are designed to provide for the normal operating costs of approved programs and for items of special research equipment.

The Personnel Support Programs provide opportunities for research training of graduates of high calibre at the postdoctoral level through Fellowship and Centennial Fellowship programs and, more recently, for training at the pre-doctoral level through a program of Studentships. These awards are all prize awards and the number of successful candidates is therefore limited. Many other research trainees, however, receive support through operating grants to the investigators who act as their supervisors. The MRC's Associateship Program, which was started in 1956, has had considerable impact on the development of the research effort in Canadian medical schools; it provides continuing salary support for a limited number of highly qualified independent researchers working in universities and devoting at least 75 p.c. of their time to research and graduate teaching. A more recent category of support, the Medical Research Council Scholarship, provides young investigators who have completed their formal research training with an opportunity to demonstrate in a university setting their potential for independent research without the necessity of, at the same time, carrying a heavy undergraduate teaching load. These awards are limited to five years. Provision is also made for the exchange of information among Canadian scientists through the Visiting Professorship Program, and among Canadian scientists and their foreign colleagues by means of the Visiting Scientist Program under which Canadian investigators may spend up to one research year abroad or foreign scientists may spend periods of three to twelve months working in Canadian laboratories.

Under the heading of Research Development, MRC provides financial support for scientific symposia and workshops held in Canada, and assists in defraying the cost of Canadian delegates' attendance at certain international congresses. A significant portion



Investigations of dec sion sickness, gas g and other diseases w concentration of oxyge high pressure is requi conducted in the Hy Chamber at the General Hospit

of MRC's developmental funds is used to overcome disparities, both regional and disciplinary, in Canada's research effort; universities attempting to build up programs in underdeveloped fields are encouraged to apply for Negotiated Development Grants which are designed to assist local authorities in the recruitment of new staff by giving assurance of research funds and equipment for periods of up to two years. A Group Program permits two or more senior investigators of high calibre to concentrate their efforts on a specific field. MRC supports a Group working in the Neurological Sciences at the Université de Montréal, members of which have been freed by the university from administrative and undergraduate teaching duties; MRC, in turn, provides funds for the salaries of the full time members of the Group and their supporting personnel, for the operating costs of the research and for major equipment.

MRC has taken the initiative in sponsoring clinical trials carried out on a national collaborative basis; the first is the Therapeutic Trial of Human Growth Hormone in the treatment of certain types of dwarfism and the second, a study on the efficacy of anti lymphocyte serum in preventing rejection of renal transplants.

In addition to its responsibilities in the direct support of extramural research, the Medical Research Council is involved in the integration of health science research with other aspects of the Federal Government's activities in the health field. To co-ordinate federal research efforts, the President of the Medical Research Council is an associate member of the National Research Council, a member of relevant committees of the Defence Research Board and of the Department of Veterans Affairs and participates in meetings of the Health Research Committee of the Department of National Health and Welfare. The Deputy

Minister of National Health and the Vice-President (Scientific) of the National Research Council are also associate members of the Medical Research Council. In addition, members of Council and of its secretariat serve on committees of a number of the voluntary agencies which support research in the health sciences and a continual exchange of information as to policies and procedures is achieved in this way. The Medical Research Council welcomes consultation with the universities and industry and, where advisable, is prepared to set up study groups for the consideration of problems that have a bearing on the nation's health.

Subsection 8.—International Health

Canada actively assists and co-operates with the World Health Organization (WHO) and the other specialized agencies of the United Nations whose programs have a substantial health component or orientation. Canada's candidacy for re-election to the WHO Executive Board was successful by almost unanimous support at the 21st World Health Assembly. Capital and technical assistance are provided to developing countries through the Colombo Plan and other bilateral aid programs. Health training is provided for a number of persons coming to Canada each year under the various technical co-operation schemes (see pp. 201-205); during 1969, there were 313 trainees in Canada studying in a wide range of health disciplines under the Canadian International Development Agency program but with greatest concentration in undergraduate medicine and in public health.

Canadian experts in health legislation, health administration, nursing and related areas undertook specific assignments abroad during the year and teachers and specialists in a number of clinical fields were provided in response to requests from the developing countries. Capital assistance, primarily through the provision of Cobalt-60 beam therapy units for cancer treatment centres in the Colombo Plan area, was continued. As a result of their visit to Viet-Nam in 1967, the Advisory Team on the Viet-Nam Medical Program recommendations regarding tuberculosis, rehabilitation, immunization, hospital equipment and other programs have been implemented.

To carry out Canada's obligations under the International Sanitary Conventions, the Department of National Health and Welfare maintains quarantine measures for ships and aircraft entering Canadian ports and provides accommodation and medical care for persons arriving in Canada who require quarantine (see p. 339).

The Department is responsible for the enforcement of regulations governing the handling and shipping of shellfish under the International Shellfish Agreement between Canada and the United States and, at the request of the International Joint Commission, participates in studies connected with control of pollution of boundary waters between Canada and the United States as well as with problems caused by air pollution. Other responsibilities include the custody and distribution of biological, vitamin and hormone standards for WHO and certain duties in connection with the Single Convention on Narcotic Drugs, 1961, as well as Canada's representation on the Narcotic Commission of the United Nations.

Subsection 9.—Consultative and Technical Services

The Department of National Health and Welfare extends consultative and technical services to the provinces over a broad range of health activities. The consultant divisions of the Health Services Branch are concerned with: epidemiology including disease surveillance; communicable disease control as exemplified by the Canadian Communicable Disease Centre that serves as the national reference laboratory for diagnosis of bacterial and viral diseases; child and adult health including mental health, dental health and nutrition; and rehabilitation, emergency health and environmental health problems described elsewhere. The Department also provides technical advisory services to the provinces through its Health Insurance and Resources Branch, Research and Statistics Directorate and Health and Information Division.

Section 2.—Provincial and Local Health Services

Provincial governments are primarily responsible for health measures to prevent disease and improve the health standards of the community. These comprise preventive health services, hospital services, mental health services, treatment services for tuberculosis and other diseases, and special treatment services and care of the chronically ill and disabled. They are usually administered by the provincial health department or other official agency in co-operation with the hospitals and voluntary health organizations, the health professions and the teaching and research institutions.

Although the pattern of services is similar, provincial health organization, financing and administration vary to some degree. Most health functions are exercised by the provincial health departments but in some provinces certain programs, such as hospital insurance, medical care insurance, tuberculosis control, cancer control or alcoholism programs, are administered by separate public agencies directly accountable to the minister of health. Voluntary organizations also provide specialized health services, often with some support from tax funds in the form of payment for services or support grants.

In general, the provincial health departments carry out over-all planning and direction of public health programs, administer certain specialized health programs, and assist through technical and financial aid the regional or local health units and city health departments that have been delegated responsibility for the basic public health services. In most provinces, the health unit systems, which serve mainly rural areas, are operated either by the province or jointly by the province and the local authority, with the local authority having jurisdiction over county, municipality or region, while city health departments are administered by municipal or metropolitan boards of health. Several provincial health departments also directly administer health services to northern unorganized territories. The nucleus staff of a local health unit or department usually is composed of a full-time medical officer of health, a number of public health nurses and a public health inspector.

Local official programs to safeguard community health are concerned with environmental sanitation to ensure safe water, milk and other foods; prevention and control of infectious diseases through use of vaccines and prophylactics; improvement of maternal and child health and dental health; registration of vital statistics; and health education and counselling. In addition, the larger city health departments have developed specialized services in such areas as mental health, home care, and rehabilitation of the chronically ill and the handicapped. A few health units and departments in most provinces have started health screening for chronic conditions and family planning clinics. The city health departments participate to some degree with the provincial authorities in accident prevention and in measures to control air, water and soil pollution.

Provincial health departments support the local programs by grants-in-aid and consultant services. Most mental and tuberculosis hospitals and clinics are provincially operated, as are treatment services for the venereal diseases, cancer, alcoholism and other specific diseases, and the laboratories that aid both the public health agencies and practising physicians in diagnostic and control procedures. The provincial agencies are primarily responsible for the collection and analysis of vital statistics and the study of the epidemiological and related social and economic conditions that affect health. They also give leadership in such fields as occupational health, nutrition, health education and pollution problems in collaboration with national health agencies. In order to maintain and improve health services, the provincial health departments recruit and train professional and technical personnel for the health fields and support public health research.

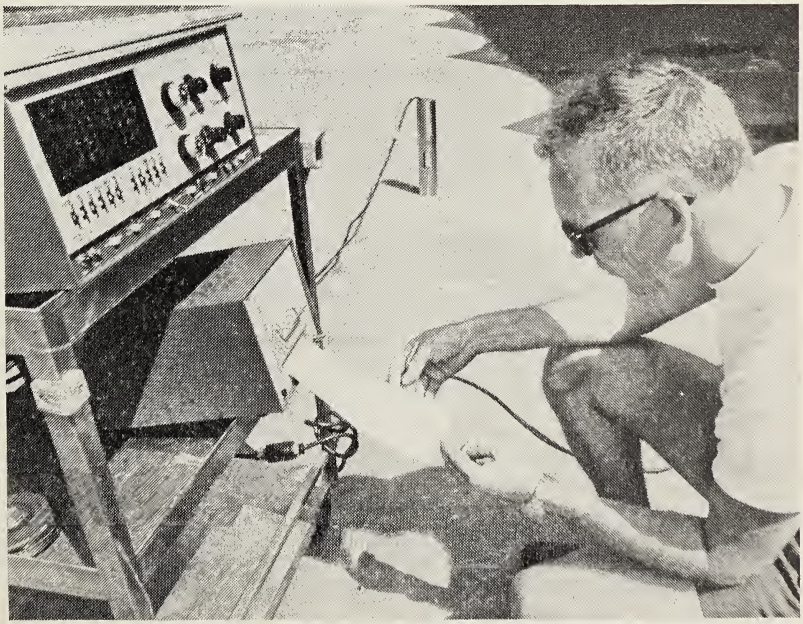
Subsection 1.—Public Health Services

Environmental Health.—Environment is the sum of all social, biological, physical and chemical factors that make up man's surroundings, and deterioration and modification of the quality of that environment has emphasized the need for assessing the health implications and for developing and stimulating the use of methods to control or eliminate harmful factors.

As technological advances continue, there is an ever-increasing injection of man-made products into the air, water and soil environment, usually as waste or by-products and often at low concentrations, and many of these pollutants are known to affect health. The relationship between deleterious pollutants and their effects on health depends on such factors as their concentration and the duration of exposure. Of particular importance are the possibility of some or total recovery between periods of exposure, the variability in susceptibility to disease from individual to individual, and effects associated with simultaneous or superimposed exposure to two or more pollutants. The considerable evidence of potential long-term serious consequences of environmental pollution on health justifies the present concern and the need for increased activity.

Programs to protect workers in their occupational environments have been carried on by occupational health officials for a number of years but it is only recently that health officials have been directing their attention to health hazards in the general environment. For example, although there is a long history of activities concerned with the health effects of noise in the industrial and agricultural environment, attention is now being focused also on the health effects of community noise.

The various agencies in Canada concerned about environmental health are in process of developing and implementing programs to assess and control air and water pollution, radiation, industrial toxicants, and other factors of the general, occupational and home



A Department of National Health and Welfare technician takes measurements following the use of radioactive isotopes to test the sources of pollution of a popular bathing beach.

environments known to be, or suspected of being, deleterious to human health. The complexity of their task requires the work of specialists in a variety of disciplines falling within the broad spectrum of physical, life and engineering sciences and the co-operative efforts of governments and other agencies. Individual tasks include field surveys and interpretation of air and water pollution, research into health effects and their causes from all kinds of toxicants, development of guides and standards for pollutants such as chemicals and other hazards in both the working and general environment, and the specifying of health and safety standards for radiation-emitting devices.

The Federal Government discharges its responsibilities in environmental health through the Environmental Health Directorate of the Department of National Health and Welfare which is composed of four Divisions—Occupational Health, Public Health Engineering, Radiation Protection, and Air Pollution Control (the latter created in late 1969). Each of the ten provinces has agencies to deal with the problems of water supply, sewerage systems and water pollution; six provinces have agencies to handle air pollution problems and agencies to deal with occupational health; and one province is in process of establishing an occupational health unit. Co-ordination of the many activities within provinces and between the provinces and the Federal Government is usually provided by advisory boards or committees.

Occupational Health.—Services designed to prevent accidents and occupational diseases and to maintain the health of employees are the common concern of provincial health departments, labour departments, workmen's compensation boards and industrial management. Provincial agencies regulate working conditions and offer consultant and educational services to industry. All provinces have legislation (Factory Acts, Shop Acts, Mines Acts, Workmen's Compensation Acts) setting standards for health safety and accident prevention on the job. Most provinces maintain environmental health laboratories that study industrial health problems such as the effects of noise and air conditions on workers.

Communicable Disease Control.—The larger provincial health departments have separate divisions of communicable disease control headed by full-time epidemiologists whereas in the smaller provinces this function is combined with one or more community health services. Local health authorities organize public immunization clinics against diphtheria, tetanus, poliomyelitis, whooping cough, smallpox and measles. They also engage in case-finding and diagnostic services in co-operation with public health laboratories and private physicians. Special services for tuberculosis and venereal diseases are noted on pp. 348 and 349.

Health Education.—Most provincial health departments have a division or unit of health education directed by a full-time professional "health educator" to promote public knowledge of health needs and measures. This division or unit provides education materials to other divisions of the health department, to local health authorities, to voluntary associations, and to individuals. Many educational activities are directed to accident prevention and to reducing habits harmful to health, such as cigarette smoking and the excessive use of alcohol and drugs. All health workers carry out health education as part of their normal activities.

Public Health Laboratories.—All provinces maintain a central public health laboratory and most have branch laboratories to assist local health agencies and the medical profession in the protection of community health and the control of infectious disease. Public health bacteriology (testing of milk, water and food), diagnostic bacteriology and pathology are the principal functions of the laboratory service, with medical testing for physicians and hospitals steadily increasing in volume.

Maternal and Child Health.—Public health nurses employed by the local health services carry out preventive health services to mothers, newborns and children throu

clinics, home and hospital visits and school health services. All provincial health departments have established maternal and child health consultant services that co-operate with the public health nursing services. The maternal and child health divisions established in five provinces also undertake studies in maternal and child care, including hospital care, and assist in the training of nursing personnel.

Nutrition.—Provincial health departments and some city health departments employ consultants in nutrition to extend technical guidance and education to health and welfare agencies, nursing homes and other care institutions and hospitals. They provide diet counselling to selected patient groups and conduct nutritional surveys and other research.

Dental Health.—Provincial dental public health programs have been largely preventive but increasing emphasis is now being given to dental care. Dental clinics conducted by local health services are usually restricted to pre-school and younger school-age groups. A number of provinces send dental teams to remote areas and subsidize resident dentists to practise in areas lacking such services; the four western provinces have dental care schemes of varying coverage for welfare recipients. Other dental health programs are directed to the training of dentists and dental hygienists, the conduct of dental surveys and the extension of water fluoridation.

Subsection 2.—Mental Health Services

Mental health services in Canada are organized as part of provincial health services. Each province employs a director of mental health services, usually a psychiatrist, and one or more consultants in psychiatric nursing, clinical psychology, social work, occupational therapy or special education and also one or more psychiatrists specializing in paediatrics, geriatrics, mental retardation, alcoholism and drug addiction, or other related fields. As public health officers, the mental health directors are responsible for the development of programs aimed at prevention of mental disease and for the general promotion of mental health, on their own and in co-operation with welfare, education, manpower, labour, and justice departments. As psychiatrists, they are responsible for development and supervision of the various health facilities for the treatment of people who suffer from mental or emotional disorders including disorders of character and behaviour, the mentally retarded, people with damage to the nervous system, alcoholics and drug addicts.

Mental health services differ in detail and stage of development from province to province; all are being extended and improved to take advantage of the best methods of treatment and prevention. The traditional pattern of long-term care of the mentally ill and retarded in large isolated mental hospitals and in hospitals for mental defectives is giving way to new patterns of care designed to cure the afflicted or, failing that, to provide for them living and working environments that will enable them to lead reasonably normal lives.

The mental hospitals now place less emphasis on custodial care and more on intensive psychiatric treatment. They admit voluntary patients who receive much the same care and treatment as they would receive as patients in a general hospital. Many of those who would not profit from intensive psychiatric treatment—the severely retarded and people with severe mental deterioration—are supported under welfare auspices in sheltered workshops, nursing homes or foster homes and continue to receive medical care. In addition to the mental hospitals, some special "psychiatric" hospitals provide intensive psychiatric care over short periods, and psychiatric units and out-patient psychiatric departments are being established in large general hospitals. Local authorities or provincial health departments operate mental health clinics in most large cities and travelling clinics visit suburban and rural areas. Psychiatric hospitals and mental health clinics are establishing more day-care and night-care facilities through which some patients receive

part-time hospital care and therapy during the day and go home at night and others go to work during the day and return to hospital in the evening for treatment.

Extending mental health services into the community aims at preventing severe mental and emotional breakdowns and at reducing the number of people requiring treatment in institutions. Under the terms of the federal-provincial medical care legislation, in effect in seven provinces as of Mar. 31, 1970, the services of private psychiatrists should become more widely available. Through early diagnosis and treatment in a mental health clinic or out-patient department of the hospital in the patient's neighbourhood, he may continue to live at home and pursue his normal occupation while receiving treatment.

Special centres have been established for the study and treatment of alcoholism and drug addiction, criminal psychopathy, psychiatric disorders in children, brain injuries and other neurological disorders. Studies recently instigated by the Federal Government in these and related areas include a survey of residential and in-patient services for emotionally disturbed children and the appointment of the Commission of Inquiry into the Non-medical Use of Drugs. The interim report of its findings and recommendations was tabled in the House of Commons on June 19, 1970; the principal recommendations are mentioned in the introduction to this Chapter. In addition, the provinces are amending the pertinent legislation in order to guarantee the rights of the mentally ill, the emotionally disturbed and the intellectually retarded.

The continuing efforts by provincial health departments to provide more and better mental health services reflect growing enlightenment about mental health on the part of the medical profession, the general public and government agencies. Improvement in the care of psychiatric patients has been fostered by activities of voluntary organizations such as the Canadian Mental Health Association and the Canadian Association for the Mentally Retarded; by the professional advice of the Canadian Medical Association and the Canadian Psychiatric Association; by the national health grants and the national welfare grants for new services, professional training, and scientific research; and through the information programs of the Mental Health Division of the Department of National Health and Welfare.

In the field of mental retardation, the Federal Government instituted a Mental Retardation Grant in 1967-68 to support health and welfare demonstration and research projects conducted by voluntary agencies for the mentally retarded. The amount allocated to this grant was $500,000 annually for the period 1967-68 to 1969-70, and $400,000 for 1970-71.

Subsection 3.—Services for Specific Diseases or Disabilities

Tuberculosis.—New active cases of tuberculosis in Canada in 1968 numbered 4,82 or 23 per 100,000 population, and in 1969 the total was 4,438 or 21 per 100,000. Re activated cases reached 755 in 1968 and 680 in 1969. Deaths again decreased, to 63 in 1968. Provincial health departments, assisted by voluntary agencies, conduct anti tuberculosis case-finding programs through community tuberculin-testing and X-ra surveys, with special attention to high-risk groups, hospital admission X-rays, and follow-u of arrested cases. BCG vaccine, estimated to be effective for 80 p.c. of those vaccinated, used in most provinces to protect certain high-risk groups; in Quebec and Newfoundland children are routinely immunized. Treatment, including hospital care, drugs and rehabilitation, is free in all provinces. Chemotherapy has shortened hospital stay and facilitate out-patient or domiciliary care. An annual federal grant of $20,000 is made to the Canadian Tuberculosis and Respiratory Disease Association to improve tuberculosis servic across the country.

The National Tuberculosis Reference Centre in Ottawa was opened in 1968 to establi uniform standards in testing for resistance to anti-tuberculosis drugs.

Cancer.—Cancer in 1968 accounted for 18.7 p.c. of all deaths in Canada, and t standardized cancer death rate increased to 137.9 (152.0 for males and 123.8 for female

It is estimated that in Ontario, for example, one in every three residents may expect to develop some form of cancer. In Canada, cancer ranks second highest as a cause of death; and over 91 p.c. of the deaths from cancer occur after 45 years of age. Special provincial agencies for cancer control, usually in the health department or a separate cancer institute, carry out cancer detection and treatment, public education, professional training, and research in co-operation with local public health services, physicians and the voluntary Canadian Cancer Society branches. Although the provisions are not uniform, all cancer programs provide a range of free diagnostic and treatment services, to both out-patients and in-patients, financed by the hospital insurance programs or the federal-provincial cancer control grants. Hospital insurance benefits for cancer patients include diagnostic radiology, laboratory tests and radiotherapy. The cancer control programs in Saskatchewan and New Brunswick also pay for medical and surgical services; in most provinces these costs are covered under the public medical care insurance schemes.

Venereal Diseases.—Because of under-reporting, public health authorities consider the prevalence of venereal disease to be much higher than the number of cases recorded. In 1969 there were 2,327 cases of syphilis and 27,111 cases of gonorrhoea reported in Canada. The provincial department of health operates clinics which provide free diagnostic and treatment services in most of the larger cities. In addition, the provinces supply free drugs to physicians treating cases in private practice. The local public health departments are concerned with case-finding, follow-up of contacts, and maintenance of health education programs.

Alcoholism.—In all provinces, health departments or other official agencies administer programs for the prevention and control of alcoholism, including public education and related studies. Conservative estimates place the number of Canadians currently requiring these services at 270,000, if a clinical definition of alcoholism is used. Treatment services available are mainly for out-patients but, with the increasing awareness of need, most provinces have expanded facilities for in-patient services. Other types of facilities operated by official and voluntary agencies include hostels and special farms or prison centres for chronic offenders with drinking problems. In several provinces, alcoholics are treated in detoxication wards rather than in jails. Provincial alcoholism agencies in Ontario, Quebec and Saskatchewan have broadened their programs to include other addictions, and British Columbia supports a separate narcotic addiction foundation. Because addictions are widely prevalent, hospitals, mental health services, and other public and voluntary health and social agencies are also involved in their diagnosis and treatment.

Other Diseases or Disabilities.—Many services for persons with chronic disabilities, such as heart disease, arthritis, diabetes, visual and auditory impairments and paraplegia have been initiated by voluntary agencies assisted by federal and provincial funds. Today, treatment for specific conditions is available at hospital out-patient clinics and in-patient or day centres, at separate clinics and rehabilitation centres and under home-care programs. (See pp. 354-355.)

Subsection 4.—Public Medical Care Insurance and Programs

Genesis of Provincial Plans.—Prior to the establishment of government-administered medical insurance in most provinces over the past few years, prepayment arrangements to cover the cost of physicians' services, mainly voluntary as regards enrolment, had developed rapidly in both the public and the private sectors. By the end of 1968, basic medical or surgical coverage, or both, was being provided to about 17,167,000 Canadians, representing 82.8 p.c. of the population. Of these, the voluntary plans operating purely in the private sector provided coverage for 10,906,000 persons or 52.6 p.c., and public plans of various kinds covered 6,261,000 persons or 30.2 p.c. At the end of 1969, when public medical care programs were operating in seven provinces, total insurance coverage for physicians' services was 18,885,000 or 89.7 p.c. of the population; public plans accounted

for coverage of 71.5 p.c. of the total population or 15,058,000 persons (up by 8,797,000 ove the previous year) and private plans for coverage of 18.2 p.c. of the population. It i anticipated that, by the end of 1970, all ten provinces will have implemented public plans The federal grants-in-aid program for provincially administered medical care insuranc plans became effective July 1, 1968, as noted on p. 332.

Not all aspects of private insurance for physicians' services were phased out after 196 In Saskatchewan, two non-profit private plans continued as fiscal intermediaries to transmi claims and payments between physicians and the public insurance administration. I Ontario, British Columbia and Nova Scotia, certain private insurance agencies continue as non-profit carriers performing administrative functions such as enrolment, checkin eligibility, and paying claims, on behalf of or under the supervision of the public insuranc authority. In other provinces the tendency was to absorb the administrative apparatu of the private agency into the public authority. Whether integrated or not into the publi insurance authority as regards physicians' services insurance, several private plans hav continued to offer policies to protect against the costs of prescribed drugs, private-dut nursing care, services of paramedical personnel, and other services not yet covered by th government plans.

Provincial Public Plans.—Each of the seven plans in operation at the end of 196 is described briefly in the paragraphs that follow, in chronological order of entry into th national program. It must be noted that although most doctors are paid on a fee-fo service basis, alternative or additional arrangements include salary, sessional payment contract service, capitation, and incentive pay. The program descriptions relate to oper tions, in most provinces, of the principal agency making payments for physicians' service Such agencies do not represent the total public involvement in medical care since pa ments may also be made by workmen's compensation boards, by the hospital insuran administrations or, for certain groups excluded from the coverage provided by the provinci agencies, by the federal or other jurisdictions responsible.

Saskatchewan.—The Saskatchewan program, introduced in July 1962, requires enro ment of the entire eligible population. The premiums are compulsory and amount to $2 a year for a family and $12 a year for a single person; they cover only a small portion of t program costs. Welfare recipients are automatically covered and no premium payme is required of them.

The following description for Saskatchewan is confined to the operations of the Medic Care Insurance Commission, which is the principal administering agency for the over-a provincial public authority concerned with prepaid medical care. The Commission mak payments to doctors for the bulk of the services provided under the program. A segme of the population obtains its insured services under terms and conditions identical to tho observed by the Commission but by way of a separate administering agency known as t Swift Current Health Region. Also, the provincial authority arranges for payment, f care in mental and tuberculosis institutions and for cancer control.

In the program of the Medical Care Insurance Commission, medical benefits inclu home, office and hospital visits, surgery, obstetrics, psychiatric care outside mental hospita anaesthesia, laboratory and radiological services, preventive medicine, and certain servic provided by dentists. There are no waiting periods for benefits and no exclusions f reasons of age or pre-existing health conditions. Refractions by optometrists are also insured benefit.

The Commission pays for approved services on the basis of 100 p.c. of the fees list in the physicians' fee schedule,* except for certain classes of services where a utilizati charge applies. These utilization charges are $1.50 for each office visit and $2.00 for ea home and out-patient call and are payable by the patient to the attending physician. such instances, the financial responsibility of the public authority is reduced by the amou

* Effective Aug. 1, 1970, the basis of payment was changed to 100 p.c. of the 1968 fee schedule for most visi

of the applicable fee. To avoid financial hardship to patients in exceptional cases, there is provision for a family maximum on the total amount of such fees that must be paid. Welfare recipients are not required to pay utilization fees; instead, the medical profession, by agreement, accepts 85 p.c. as payment in full for all services rendered to welfare patients.* The co-charges are thus paid by the provincial government (or by the Federal Government on behalf of additional exempted groups such as Indians and recipients of war veterans allowances).

Physicians may elect to receive payment in three ways. First, the physician may receive directly from the public authority payment of 100 p.c. of the tariff in the 1968 fee schedule of the Medical Association less the utilization fee, and accept this payment along with the utilization fee payable by the patient, as payment in full. Secondly, patients and physicians may enrol voluntarily with an "approved health agency" that serves as intermediary with respect to payment between the public authority and the physicians; here also the physician receives 100 p.c. of the tariff less the utilization fee. Thirdly, a physician may elect to submit his bill directly to the patient who pays him either before or after seeking reimbursement from the public authority; the physician may bill the patient directly for amounts over and above what the public authority has paid.

British Columbia.—The province became a participant under the federal Medical Care Act on July 1, 1968. The plan is governed by a public commission with jurisdiction over a number of "licensed carriers", which are non-profit agencies charged with responsibility for day-to-day management of the separate components of the program. In addition to physicians' services and a limited range of oral surgery in hospital, the benefits include refractions by optometrists, some orthoptic services, limited physiotherapy, special nursing, and chiropractic and naturopathy services.

Participation in the program is voluntary. At the end of 1969, 2,046,000 persons or about 98 p.c. of the population was covered. Premiums are $5 a month for single persons, $10 a month for two-person families, and $12.50 a month for families of three or more. For eligible residents, the government offers subsidies amounting to 90 p.c. of the premium for persons with no taxable income and 50 p.c. of the premium for persons with taxable income from $1 to $1,000. Welfare recipients are automatically covered without payment of premium.

Payment is made at 90 p.c. of the current fee schedule. Physicians either bill patients for services rendered or accept payments directly from a licensed carrier. In the former case the physician has to notify the patient in writing before rendering a service that he is a non-participating physician, and the patient has to agree in writing that he is prepared to pay more than the amount of reimbursement that he may receive from the public authority. In the latter case, the physician may also charge a fee in excess of the tariff, provided the patient has been duly notified, he agrees in writing to the extra charge, and the amount of the extra charge is made known to the commission.

In British Columbia, by agreement between the plan and the medical profession, fees are adjusted periodically on the basis of a formula that takes into account changes in price and wage levels in the consumer and industrial sectors.

Newfoundland.—This province became a participant on Apr. 1, 1969. The plan covers all medically required services by doctors, plus a limited range of oral surgery in hospital. Refractions by optometrists are not a benefit. All eligible residents are covered and there are no premium levies; the provincial portion of total costs for insured services is met from general revenue.

Benefit payments are limited to 90 p.c. of the fee schedule. Physicians must formally elect, and use exclusively, one of the modes of payment available. A participating physician must accept 90 p.c. of the fee schedule as payment in full. A non-participating physician may impose additional charges provided he informs the beneficiary that he is not a participating physician and that he reserves the right to charge in excess of the amount

* Effective Aug. 1, 1970, the basis of payment was changed to 100 p.c. of the 1968 fee schedule for most visits.

payable by the plan. Traditionally, large numbers of doctors in Newfoundland contracted with the provincial government and with certain voluntary agencies to receive salaries for service in outlying areas; these arrangements are still in force.

Nova Scotia.—Nova Scotia became a participant on Apr. 1, 1969. All eligible residents of the province are covered. Registration is required but there are no premiums, the entire amount of the provincial portion of the costs of insured services being obtained from general revenues. Insured services include all medically necessary procedures by practitioners plus a limited range of oral surgery procedures in hospitals. Refractions by optometrists are not a benefit.

Benefit payments by the plan are made at 85 p.c. of the current fee schedule. Physicians must elect either to participate, that is, accept all payments directly from the plan, or not to participate. In either case, physicians may extra-bill but they must obtain written consent from the patient prior to rendering the service, and the amount of the extra charge has to be made known to the commission.

The Nova Scotia plan is administered by a non-profit carrier designated by the public authority as its sole agent with respect to fee-for-service accounts. This agency carries out all functions relating to eligibility checking and the processing and payment of claims subject to review and audit by the public authority.

Manitoba.—Manitoba began participating under the federal Medical Care Act on Apr. 1, 1969. Enrolment is compulsory for all eligible residents but failure to pay the required premiums is not a barrier to receipt of insured services. Premium levies are 55 cents a month for single persons and $1.10 a month for families. Coverage of welfare recipients is automatic without premium payment. There are no premium subsidies. The insured benefits cover all medically required services provided by medical practitioners and limited dental surgery in hospitals. Also included, with limitations, are the services of chiropractors and refractions by optometrists.

Physicians may elect to participate in the plan and to accept all payments from the public authority, or they may elect to receive payments direct from all their patients. In the former case, the amount received (85 p.c. of the fee schedule) must be accepted as payment in full. A non-participating physician must give a patient "reasonable notice" he intends to extra-bill.

Alberta.—Alberta became a participating province under the federal Medical Care Act on July 1, 1969, with administration placed under a Health Care Insurance Commission. Registration, as in Saskatchewan, was compulsory for all eligible residents (except that failure to pay premiums was not a barrier to receipt of insured services) and the levels of benefit were similar to those in Saskatchewan for the services of doctors and oral surgeons. Additionally, the plan provided limited coverage for such paramedical services as refractions by optometrists, podiatry, chiropractic and osteopathy. Doctors were paid at 100 p.c. of the 1968 fee schedule of the medical association. Physicians could elect several modes of submitting claims for payment. In all instances, though, the Alberta doctors retained the right to extra-bill patients if they wished, subject to prior agreement by the patient. Monthly premiums were $5 for single persons and $10 for families. No premium payment was required from welfare recipients. Subsidies reduced the premiums $2.50 for single persons, and $5 a month for families whose combined taxable income in the previous year did not exceed $500. There was a provision that the province would pay up to full premiums for those residents who could prove financial need.

Substantial changes in the program became effective July 1, 1970. A combined annual premium was established of $69 for single persons and $138 for families to cover both medical and hospital insurance. Subsidies reduce fee premiums to $24 for single persons and to $ for families with no taxable income in the previous year; to $36 for single persons whose taxable income does not exceed $500 and to $72 for families whose combined taxable income does not exceed $1,000. Registration and payment of applicable premiums is compulsory. Failure to comply makes householders liable, at time of seeking service, for payment of ba

premium levies, plus a penalty of 10 p.c. of the unpaid premium, in order to ensure payment of the doctors' claims. Residents objecting in principle to claiming benefits under the new program can now elect to remain outside the program (to "opt out") and not to be liable for premium payment. For hospital and related care, they are at liberty to obtain private insurance coverage but application of the federal Medical Care Act prevents private carriers from offering insurance for physicians' services.

The new plan also offers subscribers the option of purchasing insurance for additional health services (again, with subsidy provisions) from the voluntary Alberta Blue Cross agency. Rates, applicable to non-group enrolees only, are lower than regular non-group coverage offered by this agency but slightly higher than regular group rates. The optional membership offers coverage for hospital differential charges for semi-private and private ward care, ambulance services, drugs, appliances, home nursing care, naturopathic services, clinical psychological services, and dental care needed because of accidental injury. Also, since July 1, 1970, payments to physicians are made at 100 p.c. of the 1969 fee schedule.

Ontario.—Ontario began participating on Oct. 1, 1969. Enrolment is compulsory for persons in specified employed groups and voluntary for others. The insured benefits currently cover all medically required services of medical practitioners and of oral surgeons in specified hospital settings, and refractions by optometrists. Provision was made, after July 1, 1970, for coverage, with limitations, of certain paramedical services offered by chiropractors, osteopaths and podiatrists.

Payments are made at 90 p.c. of the current fee schedule. Physicians may choose various modes of payments but are not required to enter into a formal commitment to confine themselves to any given mode. Regardless of the mode of payment selected, a physician is required to advise the patient of any intention to charge more than is provided under the plan. Premiums are $5.90 a month for single persons, $11.80 a month for two-person families, and $14.75 for families of three or more. Coverage is automatic for welfare recipients and no premium payment is required of them. Subsidies for low-income families modify premiums as follows. (1) For those with no taxable income in the previous year—full premium assistance (i.e., 100 p.c. subsidy). For those with some taxable income—$2.95 a month (i.e., 50 p.c. subsidy) for single persons if taxable income in previous year was $500 or less; $5.90 a month (i.e., 50 p.c. subsidy) for two-person families if combined taxable income in previous year was $1,000 or less; and $5.90 a month (i.e., 60 p.c. subsidy) for families of three persons or more if combined taxable income in previous year was $1,300 or less. There are two additional provisions relating to financial aid. Coverage for three months is paid for families qualifying for temporary assistance, and recipients of old age security pensions are entitled to full subsidy of premiums at permissible income levels higher than the ceilings set under the general subsidy program.

The public authority in Ontario makes use of administering agencies, which can be non-profit agencies or commercial insurance companies handling this component of their activities on a non-profit basis. Agencies can be "designated" or "participating" depending upon the degree of their involvement in enrolment and claims-processing functions. Most of their enrolment is of employee and other groups. Additionally, the Ontario Health Services Insurance Plan itself enrols members and processes claims and covers the majority of non-group and subsidized beneficiaries.

Health Care Programs for Welfare Recipients.—Provincial programs providing certain medical care and other health care benefits to recipients of welfare allowances were in operation in all provinces prior to the introduction of province-wide medical care insurance. Following the implementation of such plans in Saskatchewan, Alberta, British Columbia, Ontario, Manitoba, Nova Scotia and Newfoundland, provincial welfare recipients became automatically enrolled for benefits identical to those applicable to the general population, and without premium payment. Co-charges and extra-billing are usually waived. Programs expressly covering welfare recipients and providing a virtually comprehensive range of physicians' services continued in Quebec, New Brunswick and Prince

Edward Island pending the commencement of public medical insurance plans. The costs of these programs are shareable under the Canada Assistance Plan.

The provision of other health care benefits continues to follow a variety of patterns established under provincial or municipal programs with 50 p.c. of the costs assumed by the Federal Government under the Canada Assistance Plan.

All generally used prescription drugs are included in New Brunswick, Manitoba, Saskatchewan, Alberta and British Columbia; extensive dental care and optical care are provided in the four westernmost provinces, although certain services may be subject to special authorization, to dollar limits, or both. Ontario has a basic dental-care program for recipients of mothers' and dependent fathers' allowances and their children, and shares the cost of prescribed optical care, prosthetic appliances, drugs and dental care provided at municipal discretion. Such services as home nursing, appliances, physiotherapy, podiatry, chiropractic and emergency transportation may also be paid under some programs.

Subsection 5.—Services for the Disabled and Chronically Ill

The success of rehabilitation programs for injured workers, veterans, handicapped children and other disability groups has encouraged more recent efforts to extend such services to all handicapped persons. Physical medicine and rehabilitation departments have been established in teaching hospitals and in most veterans' and children's hospitals. There are about 40 children's hospitals and rehabilitation centres located in the main cities; many children are also treated at general hospitals, or at rehabilitation centres that serve both adults and children. Five rehabilitation centres are operated under workmen's compensation programs. Services for veterans are dealt with at pp. 408-409.

Hospital services available to in-patients and out-patients include physical medicine, physiotherapy, occupational therapy and social services; most of the children's hospitals and the teaching hospitals also supply speech therapy. The rehabilitation centres provide comprehensive medical, psychosocial and vocational services to more severely disabled persons. Provincial and community agencies providing rehabilitation and home care services co-operate in the rehabilitation of disabled persons.

Most large general hospitals operate out-patient clinics for various diseases and disabilities, such as arthritis and rheumatism, diabetes, glaucoma, speech and hearing defects, heart diseases and orthopaedic and neurological conditions. Voluntary agencies concerned with such specific disability groups as arthritics, the blind, the deaf, children suffering from cystic fibrosis, haemophilia or muscular dystrophy, the mentally ill or retarded, or disabled persons generally, are also broadening their rehabilitation services to include counselling, personal aids and appliances, transportation, employment and education, sheltered workshops and services for the homebound. Home-care programs under either hospital or community sponsorship, have been established in five provinces to provide nursing, homemaker, physiotherapy and other services to the disabled, the chronically ill, the aged, and the convalescent.

Provincial health, welfare and education departments and voluntary agencies are developing specialized services for physically and mentally handicapped children. Most provinces have registries of handicapped children, of varying coverage, and these are being found increasingly useful in the planning and co-ordination of rehabilitation services. In addition to medical rehabilitation, health departments and the crippled children's societies provide family counselling, recreation, transportation and foster-home care; travelling clinics extend periodic diagnostic and treatment services to outlying areas. Special schools or classes for various groups of handicapped children are operated by local school boards in the main cities but most of the 15 residential schools for the deaf and the six for the blind are operated under provincial auspices.

Regional prosthetic research and training units, supported by national health grants, have been set up in rehabilitation centres in Montreal, Toronto and Winnipeg, and in the Bio-Engineering Institute of the University of New Brunswick. Artificial limbs and

rosthetic appliances are available in 12 prosthetic centres across Canada in accordance ith provisions determined by provincial health departments. A federal-provincial rogram assists in the extraordinary rehabilitation, maintenance and counselling costs on ehalf of children with thalidomide-induced defects.

Eleven university schools offer training in physical therapy and/or occupational therapy nd four provide training in audiology and speech therapy. In the year ended Mar. 31, 970, of the $30,900,290 made available through the general health grants to assist the rovinces in their rehabilitation programs, $2,093,458 was specifically allocated to the Iedical Rehabilitation and Crippled Children Grant. These grants are used to develop iedical rehabilitation personnel through grants to the university schools and student ursaries, for equipment, and for research.

Section 3.—Emergency Health Services

In 1951 when the responsibility for civil defence was transferred from the Department f National Defence to the Department of National Health and Welfare, the Civil Defence Iealth Services group was formed within the Department to make plans for health services i a wartime emergency. In 1959, the Civil Defence Order assigned special powers and uties to several Ministers to prepare and to assist the provincial and municipal governents to prepare for war emergencies (this Order, as amended in 1963, was replaced in 1965 y the Civil Emergency Measures Planning Order) and the Canada Emergency Measures rganization was created to co-ordinate civil-defence planning (see Chapter XXVI, Sect. 7).

The Emergency Health Services Division, established in 1949 by the Minister of ational Health and Welfare in his own Department, encourages, with the support of an dvisory committee, the provinces to develop their own emergency health services divisions. hese are organized under a provincial director who is generally assisted by a health-upplies officer and a nursing consultant. A staff medical officer represents the federal mergency Health Services in each provincial organization.

The provincial emergency health services have four tasks: they ensure effective nctioning of health services so that vital health services will be maintained in an mergency or reorganized after a disaster; they encourage and co-ordinate local planning r the development of emergency medical units; they inform and educate the public rough courses in first aid to the injured and in home nursing, and train professional ealth workers, students and volunteers for their functions during an emergency; and they spose emergency medical units of the national stockpile at strategic locations.

Not all provincial and municipal health departments have developed their emergency anning to such an extent that they could function in a wartime disaster. Some, however, ave planned their emergency measures so that they have been able to meet peacetime sasters successfully. Many emergency medical units have been strategically located nd the governments generally are agreed upon the objective of emergency health planning.

Section 4.—Hospital and Other Health Statistics

Statistical information on the health of Canadians is limited to the well established and ghly standardized mortality, communicable disease and institutional statistics series, all which have been available for a long period, and the recently established hospital morbidity series and other series covering operations under the federal-provincial hospital surance program (pp. 335-337). Much statistical information is also available from rovincial and other health sources. Information arising from medicare programs is available mainly from provincial medicare plans.

Statistics on causes of death are given in the Chapter on Vital Statistics, pp. 304-307; ose on hospital statistics including hospital morbidity in Subsection 1 following; those on otifiable diseases in Subsection 2; and those relating to physicians and their earnings in ubsection 3.

Subsection 1.—Hospital Statistics*

Canadian hospitals are classified, for statistical purposes, according to (1) type of ownership, which can be public, private or federal, and (2) type of service provided, which can be general, allied special (chronic, convalescent, rehabilitation, maternity, communicable disease or orthopaedic), mental or tuberculosis. General hospitals, which account for the greatest number of beds, are subdivided by size, based on rated bed capacity.

Data pertaining to the number of hospitals in operation (Table **5**), their classification and their rated bed capacities (Table **6**) were available for Jan. 1, 1970 (figures were previously given as at Dec. 31 of the year indicated) at the time of preparation of this Subsection but Dec. 31, 1968 data were the latest available for Tables **7** to **14.**

As shown in Table **5**, the number and bed capacity of hospitals operating in Canada has fluctuated very little over the past few years.

5.—Number and Bed Capacity of Operating Public, Private and Federal Hospitals, 1965-70

Type	1965[1]	1966[1]	1967[1]	1968[1]	1970[2]
	Hospitals				
	No.	No.	No.	No.	No.
General	955	948	953	950	938
Allied special	328	325	324	319	333
Mental	105	108	108	115	119
Tuberculosis	45	40	39	35	33
Totals	**1,433**	**1,421**	**1,424**	**1,419**	**1,423**
	Beds				
	No.	No.	No.	No.	No.
General	112,098	114,591	117,895	120,213	119,523
Allied special	21,901	22,285	23,070	23,273	25,960
Mental	65,928	65,265	65,545	64,252	61,192
Tuberculosis	5,912	5,168	4,912	4,258	3,914
Totals	**205,839**	**207,309**	**211,422**	**211,996**	**210,589**

[1] As at Dec. 31. [2] As at Jan. 1.

Table **6** shows the number and bed capacity of public, private and federal hospital classified by province and by type as at Dec. 31, 1968 and Jan. 1, 1970; rated beds per 1,00 population numbered 10.2 on the former date and 10.0 on the latter. Generally, the propo tion of rated beds in general and allied special hospitals has been rising over the past fe years while the proportions for mental and tuberculosis hospitals have been declining. I 1968, general hospitals accounted for 56.7 p.c. of the rated beds, or 5.8 beds per 1,000 popul tion; and in 1969 (or Jan. 1, 1970), 56.8 p.c., or 5.6 per 1,000 population. In both year the lowest number of rated beds in general hospitals was recorded in Quebec (4.9 and 4.' respectively), and the highest number in Saskatchewan (7.2 each year). Mental hospita accounted for 30.3 p.c. (3.1 per 1,000 population) and 29.1 p.c. (2.8 per 1,000 populatio of the rated beds in 1968 and 1970, respectively; allied special hospitals for 11.0 p.c. (1.1 p 1,000 population) and 12.3 p.c. (1.3), respectively; and the remainder, 2.0 p.c. (0.2 per 1,0 population), and 1.9 p.c. (0.2), respectively, were located in tuberculosis sanatoria.

* Prepared in the Institutions Section of the Health and Welfare Division, Dominion Bureau of Statisti Detailed information will be found in the following DBS publications: Hospital Statistics, Vols. I to VII (Catalog Nos. 83-210 to 83-216); Mental Health Statistics, Vol. III (Catalogue No. 83-205); Tuberculosis Statistics, Vol. (Catalogue No. 83-207); Annual Salaries of Hospital Nursing Personnel (Catalogue No. 83-218); and List of Canadi Hospitals and Related Institutions and Facilities (Catalogue No. 83-201).

6.—Number and Bed Capacity of Operating Public, Private and Federal Hospitals, by Province and Type, as at Dec. 31, 1968 and Jan. 1, 1970

Province or Territory and Category	General			Allied Special			Totals, General and Allied Special		
	Hospitals	Beds	Beds per 1,000 Population[1]	Hospitals	Beds	Beds per 1,000 Population[1]	Hospitals	Beds	Beds per 1,000 Population[1]
	No.	No.	No.	No.	No.	No.	No.	No.	No.
1968									
Newfoundland—									
Public	33	2,752	5.4	14	230	0.5	47	2,982	5.9
Private	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	—	—	—
Prince Edward Island—									
Public	8	708	6.4	1	30	0.1	9	738	6.7
Private	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	—	—	—
Nova Scotia—									
Public	44	4,308	5.7	3	185	0.2	47	4,493	5.9
Private	1	5	--	—	—	—	1	5	--
Federal	2	564	0.7	—	—	—	2	564	0.7
New Brunswick—									
Public	38	3,869	6.2	2	105	0.2	40	3,974	6.4
Private	—	—	—	—	—	—	—	—	—
Federal	1	305	0.5	—	—	—	1	305	0.5
Quebec—									
Public	139	27,925	4.7	43	6,477	1.1	182	34,402	5.8
Private	24	796	0.1	51	2,419	0.4	75	3,215	0.5
Federal	1	570	0.1	8	1,128	0.2	9	1,698	0.3
Ontario—									
Public	185	40,034	5.5	39	5,267	0.7	224	45,301	6.2
Private	10	547	0.1	57	1,523	0.2	67	2,070	0.3
Federal	4	1,841	0.3	4	16	--	8	1,857	0.3
Manitoba—									
Public	79	5,138	5.3	4	878	0.9	83	6,016	6.2
Private	3	40	--	1	50	0.1	4	90	0.1
Federal	3	693	0.7	10	37	--	13	730	0.8
Saskatchewan—									
Public	143	6,772	7.1	7	581	0.6	150	7,353	7.7
Private	—	—	—	—	—	—	—	—	—
Federal	2	114	0.1	1	4	--	3	118	0.1
Alberta—									
Public	116	10,019	6.6	29	2,855	1.9	145	12,874	8.4
Private	—	—	—	—	—	—	—	—	—
Federal	5	910	0.6	3	11	--	8	921	0.6
British Columbia—									
Public	87	10,097	5.0	20	1,362	0.7	107	11,459	5.7
Private	5	44	--	—	—	—	5	44	--
Federal	4	1,642	0.8	1	30	--	5	1,672	0.8
Yukon and Northwest Territories—									
Public	9	264	5.7	—	—	—	9	264	5.7
Private	1	8	0.2	—	—	—	1	8	0.2
Federal	3	248	5.4	21	85	1.8	24	333	7.2
Canada, 1968—									
Public	**881**	**111,886**	**5.4**	**162**	**17,970**	**0.9**	**1,043**	**129,856**	**6.3**
Private	**44**	**1,440**	**0.1**	**109**	**3,992**	**0.2**	**153**	**5,432**	**0.3**
Federal	**25**	**6,887**	**0.3**	**48**	**1,311**	**0.1**	**73**	**8,198**	**0.4**

[1] Based on estimated population as at June 1, 1968.

6.—Number and Bed Capacity of Operating Public, Private and Federal Hospitals, by Province and Type, as at Dec. 31, 1968 and Jan. 1, 1970—continued

Province or Territory and Category	Mental			Tuberculosis			Totals, All Hospitals		
	Hospitals	Beds	Beds per 1,000 Population[1]	Hospitals	Beds	Beds per 1,000 Population[1]	Hospitals	Beds	Beds per 1,000 Population[1]
	No.	No.	No.	No.	No.	No.	No.	No.	No.
1968									
Newfoundland—									
Public	1	827	1.6	1	223	0.4	49	4,032	8.0
Private	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	—	—	—
Prince Edward Island—									
Public	2	391	3.6	1	30	0.3	12	1,159	10.5
Private	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	—	—	—
Nova Scotia—									
Public	5	1,840	2.4	2	352	0.5	54	6,685	8.8
Private	—	—	—	—	—	—	1	5	--
Federal	—	—	—	—	—	—	2	564	0.7
New Brunswick—									
Public	3	1,906	3.1	2	218	0.3	45	6,098	9.8
Private	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	1	305	0.5
Quebec—									
Public	32	17,656	3.0	10	1,161	0.2	224	53,219	9.0
Private	—	—	—	—	—	—	75	3,215	0.5
Federal	—	—	—	—	—	—	9	1,698	0.3
Ontario—									
Public	35	22,828	3.1	10	1,057	0.1	269	69,186	9.5
Private	10	807	0.1	—	—	—	77	2,877	0.4
Federal	—	—	—	1	150	--	9	2,007	0.3
Manitoba—									
Public	7	2,890	3.0	2	207	0.2	92	9,113	9.4
Private	—	—	—	—	—	—	4	90	0.1
Federal	—	—	—	—	—	—	13	730	0.8
Saskatchewan—									
Public	4	2,921	3.0	2	302	0.3	156	10,576	11.0
Private	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	3	118	0.1
Alberta—									
Public	8	5,692	3.7	2	384	0.3	155	18,950	12.4
Private	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	8	921	0.6
British Columbia—									
Public	7	6,431	3.2	2	174	0.1	116	18,064	9.0
Private	1	63	--	—	—	—	6	107	0.1
Federal	—	—	—	—	—	—	5	1,672	0.8
Yukon and Northwest Territories—									
Public	—	—	—	—	—	—	9	264	5.7
Private	—	—	—	—	—	—	1	8	0.2
Federal	—	—	—	—	—	—	24	333	7.2
Canada, 1968—									
Public	**104**	**63,382**	**3.1**	**34**	**4,108**	**0.2**	**1,181**	**197,346**	**9.5**
Private	**11**	**870**	--	—	—	—	**164**	**6,302**	**0.3**
Federal	—	—	—	**1**	**150**	--	**74**	**8,348**	**0.4**

[1] Based on estimated population as at June 1, 1968.

6.—Number and Bed Capacity of Operating Public, Private and Federal Hospitals, by Province and Type, as at Dec. 31, 1968 and Jan. 1, 1970—continued

Province or Territory and Category	General			Allied Special			Totals, General and Allied Special		
	Hospitals	Beds	Beds per 1,000 Population[1]	Hospitals	Beds	Beds per 1,000 Population[1]	Hospitals	Beds	Beds per 1,000 Population[1]
	No.	No.	No.	No.	No.	No.	No.	No.	No.
1970									
Newfoundland—									
Public	34	2,523	4.9	14	488	0.9	48	3,011	5.8
Private	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	—	—	—
Prince Edward Island—									
Public	8	724	6.6	1	30	0.3	9	754	6.9
Private	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	—	—	—
Nova Scotia—									
Public	44	4,323	5.7	3	270	0.4	47	4,593	6.0
Private	1	5	..	—	—	—	1	5	..
Federal	2	553	0.7	—	—	—	2	553	0.7
New Brunswick—									
Public	37	4,106	6.6	2	105	0.2	39	4,211	6.8
Private	—	—	—	—	—	—	—	—	—
Federal	1	280	0.4	—	—	—	1	280	0.4
Quebec—									
Public	137	26,985	4.5	50	7,952	1.3	187	34,937	5.8
Private	21	732	0.1	49	2,364	0.4	70	3,096	0.5
Federal	2	582	0.1	8	1,098	0.2	10	1,680	0.3
Ontario—									
Public	186	40,122	5.3	41	6,152	0.8	227	46,274	6.1
Private	10	231	..	54	1,198	0.2	64	1,429	0.2
Federal	5	1,921	0.3	6	24	..	11	1,945	0.3
Manitoba—									
Public	78	4,931	5.0	5	1,122	1.1	83	6,053	6.2
Private	3	35	..	1	50	0.1	4	85	0.1
Federal	3	673	0.7	12	45	..	15	718	0.7
Saskatchewan—									
Public	136	6,760	7.1	7	569	0.6	143	7,329	7.7
Private	—	—	—	—	—	—	—	—	—
Federal	2	114	0.1	1	4	..	3	118	0.1
Alberta—									
Public	116	10,361	6.5	30	2,919	1.8	146	13,280	8.4
Private	—	—	—	—	—	—	—	—	—
Federal	5	904	0.6	3	12	..	8	916	0.6
British Columbia—									
Public	87	10,581	5.0	21	1,431	0.7	108	12,012	5.7
Private	4	37	..	—	—	—	4	37	..
Federal	3	1,516	0.7	1	30	..	4	1,546	0.7
Yukon and Northwest Territories—									
Public	9	263	5.4	—	—	—	9	263	5.4
Private	1	13	0.3	—	—	—	1	13	0.3
Federal	3	248	5.1	24	97	2.0	27	345	7.0
Canada, 1970—									
Public	**872**	**111,679**	**5.3**	**174**	**21,038**	**1.0**	**1,046**	**132,717**	**6.2**
Private	**40**	**1,053**	..	**104**	**3,612**	**0.2**	**144**	**4,665**	**0.2**
Federal	**26**	**6,791**	**0.3**	**55**	**1,310**	**0.1**	**81**	**8,101**	**0.4**

[1] Based on estimated population as at Jan. 1, 1970.

6.—Number and Bed Capacity of Operating Public, Private and Federal Hospitals, by Province and Type as at Dec. 31, 1968 and Jan. 1, 1970—concluded

Province or Territory and Category	Mental			Tuberculosis			Totals, All Hospitals		
	Hospitals	Beds	Beds per 1,000 Population[1]	Hospitals	Beds	Beds per 1,000 Population[1]	Hospitals	Beds	Beds per 1,000 Population[1]
	No.	No.	No.	No.	No.	No.	No.	No.	No.
1970									
Newfoundland—									
Public	1	827	1.6	1	223	0.4	50	4,061	7.9
Private	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	—	—	—
Prince Edward Island—									
Public	2	391	3.6	1	30	0.3	12	1,175	10.7
Private	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	—	—	—
Nova Scotia—									
Public	5	1,790	2.3	2	352	0.5	54	6,735	8.8
Private	—	—	—	—	—	—	1	5	--
Federal	—	—	—	—	—	—	2	553	0.7
New Brunswick—									
Public	3	1,911	3.1	—	—	—	42	6,122	9.8
Private	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	1	280	0.4
Quebec—									
Public	34	17,721	3.0	10	1,161	0.2	231	53,819	9.0
Private	—	—	—	—	—	—	70	3,096	0.5
Federal	—	—	—	—	—	—	10	1,680	0.3
Ontario—									
Public	35	20,506	2.7	11	1,028	0.1	273	67,808	9.0
Private	11	907	0.1	—	—	—	75	2,336	0.3
Federal	—	—	—	—	—	—	11	1,945	0.3
Manitoba—									
Public	7	2,892	3.0	2	235	0.2	92	9,180	9.4
Private	—	—	—	—	—	—	4	85	0.1
Federal	—	—	—	—	—	—	15	718	0.7
Saskatchewan—									
Public	4	2,921	3.1	2	312	0.3	149	10,562	11.1
Private	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	3	118	0.1
Alberta—									
Public	8	4,777	3.0	2	400	0.3	156	18,457	11.7
Private	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	8	916	0.6
British Columbia—									
Public	8	6,479	3.1	2	173	0.1	118	18,664	8.8
Private	1	70	--	—	—	—	5	107	0.1
Federal	—	—	—	—	—	—	4	1,546	0.7
Yukon and Northwest Territories—									
Public	—	—	—	—	—	—	9	263	5.4
Private	—	—	—	—	—	—	1	13	0.3
Federal	—	—	—	—	—	—	27	345	7.0
Canada, 1970—									
Public	197	60,215	2.8	33	3,914	0.2	1,186	196,846	9.3
Private	12	977	--	—	—	—	156	5,642	0.3
Federal	—	—	—	—	—	—	81	8,101	0.4

[1] Based on estimated population as at Jan. 1, 1970.

Total adult and child admissions to all Canadian hospitals exceeded 3,408,900 in 1968, an increase of 3.5 p.c. over 1967; there were 164 admissions per 1,000 population in the later year. Admissions to general hospitals in 1968 numbered 3,238,600, or 156.1 per 1,000 population, compared with 3,119,000 or 152.9 per 1,000 population in the previous year. The average daily population in all Canadian hospitals was 178,130 in 1968, little changed from the average of 178,050 in 1967. Of the 1968 average daily total, general hospitals accounted for 53.2 p.c. and mental hospitals for 33.4 p.c., compared with 51.7 p.c. and 35.0 p.c., respectively, in 1967. Percentage occupancy varied with the type of hospital and was highest in private allied special hospitals (94.4 p.c.) in 1968 and in public mental hospitals (98.1 p.c.) in 1967; in both years the lowest rate of occupancy was in federal tuberculosis sanatoria (61.9 p.c. and 67.0 p.c., respectively).

7.—Movement of Patients and Patient-Days in Operating Public, Private and Federal Hospitals, 1967 and 1968

NOTE.—"Patients" refers to adults and children. All ratios are based on population estimates as at June 1 of the year concerned.

Type of Service and Item	1967	1968
	PUBLIC HOSPITALS	
General—		
Beds set up at Dec. 31	109,083	112,377
Admissions	3,001,895	3,127,920
Per 1,000 population	147.1	150.8
Patient-days	31,077,679	32,402,654
Per 1,000 population	1,523.0	1,562.0
Average daily number of patients	85,144.2	88,531.8
Per 1,000 population	4.2	4.3
Percentage occupancy[1]	78.7	79.7
Allied Special—		
Beds set up at Dec. 31	17,733	17,947
Admissions	87,250	82,391
Per 1,000 population	4.3	4.0
Patient-days	5,729,192	5,909,664
Per 1,000 population	280.8	284.9
Average daily number of patients	15,696.6	16,146.6
Per 1,000 population	0.8	0.8
Percentage occupancy[1]	89.5	90.2
Mental—		
Beds set up at Dec. 31	65,094	61,500
Admissions	54,517	56,324
Per 1,000 population	2.7	2.7
Patient-days	22,494,813	21,523,497
Per 1,000 population	1,102.4	1,037.6
Average daily number of patients	61,651.4	58,807.4
Per 1,000 population	3.0	2.8
Percentage occupancy[1]	98.1	93.2
Tuberculosis—		
Beds set up at Dec. 31	4,443	3,931
Admissions	8,694	7,740
Per 1,000 population	0.4	0.4
Patient-days	1,149,572	1,007,332
Per 1,000 population	56.3	48.6
Average daily number of patients	3,149.5	2,752.3
Per 1,000 population	0.2	0.1
Percentage occupancy[1]	70.7	64.2
	PRIVATE HOSPITALS	
General—		
Beds set up at Dec. 31	1,710	1,448
Admissions	52,222	52,673
Per 1,000 population	2.6	2.5
Patient-days	514,815	445,184
Per 1,000 population	25.2	21.5
Average daily number of patients	1,410.5	1,216.3
Per 1,000 population	0.1	0.1
Percentage occupancy[1]	85.4	84.0

Type of Service and Item	1967	1968
	PRIVATE HOSPITALS—concluded	
Allied Special—		
Beds set up at Dec. 31	3,966	3,918
Admissions	16,807	16,461
Per 1,000 population	0.8	0.8
Patient-days	1,336,310	1,376,270
Per 1,000 population	65.5	66.3
Average daily number of patients	3,661.1	3,760.3
Per 1,000 population	0.2	0.2
Percentage occupancy[1]	92.0	94.4
Mental—		
Beds set up at Dec. 31	739	843
Admissions	3,319	3,406
Per 1,000 population	0.2	0.2
Patient-days	264,957	283,534
Per 1,000 population	13.0	13.7
Average daily number of patients	750.5	774.7
Per 1,000 population	--	--
Percentage occupancy[1]	96.7	91.6
	FEDERAL HOSPITALS	
General—		
Beds set up at Dec. 31	7,289	6,785
Admissions	64,866	58,013
Per 1,000 population	3.2	2.8
Patient-days	1,999,863	1,844,975
Per 1,000 population	98.0	88.9
Average daily number of patients	5,479.1	5,040.9
Per 1,000 population	0.3	0.2
Percentage occupancy[1]	74.3	73.3
Allied Special—		
Beds set up at Dec. 31	1,296	1,300
Admissions	2,713	2,849
Per 1,000 population	0.1	0.1
Patient-days	368,756	369,270
Per 1,000 population	18.1	17.8
Average daily number of patients	1,010.3	1,008.9
Per 1,000 population	--	--
Percentage occupancy[1]	73.8	77.3
Tuberculosis—		
Beds set up at Dec. 31	148	147
Admissions	1,375	1,138
Per 1,000 population	0.1	0.1
Patient-days	36,680	33,971
Per 1,000 population	1.8	1.6
Average daily number of patients	100.5	92.8
Per 1,000 population	--	--
Percentage occupancy[1]	67.0	61.9

[1] Based on rated bed capacity.

The average length of stay of adults and children separated from public general and allied special hospitals was 11.7 days in 1968, little changed from 1967 when the average was 11.5 days. Table 8 shows the variation in average length of stay by type of hospital and by region. The chronic, convalescent and rehabilitation hospitals, with an average length of stay of 126 days in 1968, represent the upper limit, far exceeding that of other types of hospitals. In public general hospitals, length of stay increases with bed capacity, usually because of the greater availability and utilization of more complex services in larger hospitals to which more severe cases are referred.

8.—Average Length of Stay of Adults and Children in Public General and Allied Special Hospitals, by Province, 1968

Type of Hospital	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	days	days	days	days	days	days	days	days	days	days	days	days	days
General	10.5	9.7	10.8	10.4	10.5	11.2	9.2	9.3	8.7	9.4	6.1	8.6	10.3
1– 9 beds	—	—	8.6	8.3	6.6	—	9.3	8.4	5.8	5.7	—	—	8.0
10– 24 "	5.4	8.1	7.8	8.9	7.7	6.8	7.2	7.3	7.6	7.4	6.1	5.9	7.2
25– 49 "	7.3	8.5	9.8	8.1	8.2	9.5	7.6	7.4	6.4	7.3	—	9.4	7.7
50– 99 "	8.4	7.8	9.7	8.6	8.2	10.9	8.0	8.5	7.6	7.9	—	—	8.9
100–199 "	10.4	9.8	10.6	9.7	9.4	10.0	10.0	9.2	8.2	8.7	—	—	9.5
200–299 "	11.2	11.2	11.5	10.2	10.2	10.2	8.5	13.0	8.4	8.7	—	—	10.1
300–499 "	16.5	—	10.5	12.2	10.5	11.3	9.7	10.9	9.0	10.7	—	—	11.0
500–999 "	—	—	13.9	17.7	12.0	11.4	11.6	12.4	10.2	10.6	—	—	11.6
1,000 or more beds	—	—	—	—	12.0	15.0	—	—	12.8	12.3	—	—	13.4
Allied Special—													
Chronic, convalescent and rehabilitation	163.4	46.4	37.8	60.6	126.5	161.6	104.2	275.8	136.4	54.7	—	—	126.0
Other	5.6	—	7.3	—	14.3	10.8	—	2.2	6.3	7.2	—	—	11.0
All Public Hospitals, 1968	**11.0**	**10.0**	**10.8**	**10.6**	**12.3**	**12.6**	**10.8**	**10.3**	**10.9**	**10.1**	**6.1**	**8.6**	**11.7**

Table 9 shows that full-time personnel in all Canadian hospitals numbered 313,395 in 1968, which was an increase of 3.6 p.c. over 1967. In all general hospitals the number of full-time personnel per 100 rated beds was 195.8 in 1967 and 198.1 in 1968; in mental hospitals it was 67.7 in 1967 and 71.2 in 1968; and in tuberculosis sanatoria 94.4 and 91.6, respectively. It is interesting to note that the proportion of the Canadian civilian labour force employed, both full-time and part-time, in all Canadian hospitals gradually increased from 3.7 p.c. in 1961 to 4.5 p.c. in 1968.

9.—Full-Time Personnel Employed in Operating Public, Private and Federal Hospitals, by Province, 1968

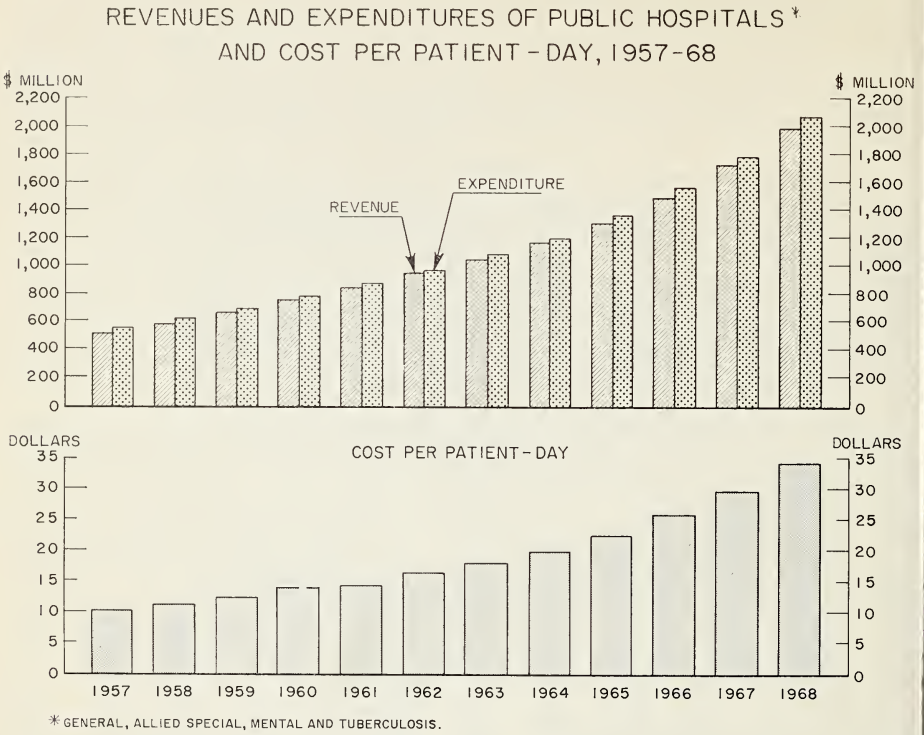
Province or Territory	General		General and Allied Special		Mental		Tuberculosis	
	Number	Per 100 Rated Beds	Number	Per 100 Rated Beds	Number	Per 100 Rated Beds	Number	Per 100 Rated Beds
Newfoundland	5,982	217.4	6,206	208.1	701	84.8	204	91.5
Prince Edward Island	1,077	152.1	1,115	151.1	277	70.8	54	180.0
Nova Scotia	9,206	188.7	9,531	188.2	1,551	84.3	509	144.6
New Brunswick	8,151	195.3	8,287	193.7	1,232	64.6	207	95.0
Quebec	69,115	236.0	80,451	204.8	12,970	73.5	995	85.7
Ontario	85,199	200.8	92,778	188.5	18,234	77.1	843	69.8
Manitoba	11,049	188.2	12,442	182.0	1,981	69.2	223	107.7
Saskatchewan	10,372	150.6	10,893	145.8	1,719	58.8	292	96.7
Alberta	18,277	167.3	20,886	151.4	3,436	60.4	416	108.3
British Columbia	19,133	162.5	20,633	156.7	3,640	56.1	157	90.2
Yukon Territory	145	98.6	154	95.7	—	—	—	—
Northwest Territories	317	90.9	378	90.1	—	—	—	—
Canada	**238,023**	**198.1**	**263,754**	**183.9**	**45,741**	**71.2**	**3,900**	**91.6**

Table **10** gives revenues and expenditures of public hospitals in 1967 and 1968. Revenues for all such hospitals in 1968 totalled $1,989,214,000, an amount 16.0 p.c. more than in 1967. The proportion accounted for by net in-patient earnings was lowest in public maternity, communicable disease and orthopaedic hospitals (79.7 p.c.) and highest in public chronic, convalescent and rehabilitation hospitals (94.5 p.c.). Of the total revenue, public general hospitals accounted for $1,512,547,000, an increase of 17.2 p.c. over 1967.

Continuing the rapid upward trend of recent years, total expenditures in all public hospitals amounted to $2,060,980,000 in 1968, 15.6 p.c. higher than those in 1967 which, in turn, had been 15.4 p.c. above those in 1966. Gross salaries and wages represented the largest expenditure item in both 1967 and 1968, ranging in the later year from a low of 64.7 p.c. in mental hospitals to a high of 71.6 p.c. in chronic, convalescent and rehabilitation . hospitals. Of the total expenditures, public general hospitals accounted for $1,573,715,000 in 1968, which was an increase of 16.6 p.c. over 1967. Table **11** shows that the proportion of expenditures allocated to gross salaries and wages was somewhat lower in the Atlantic Provinces than in the other provinces.

10.—Revenues and Expenditures of Operating Public Hospitals, by Type, 1967 and 1968

Type of Hospital	Operating Hospitals	Revenues				Expenditures				
		Net In-patient Earnings	Net Out-patient Earnings	Grants and Other Income	Total	Gross Salaries and Wages	Medical and Surgical Supplies	Drugs	Other	Total
	No.	p.c.	p.c.	p.c.	$'000	p.c.	p.c.	p.c.	p.c.	$'000
1967										
General	874	88.9	5.8	5.3	1,290,759	66.4	3.2	3.6	26.8	1,349,278
1- 9 beds	32	83.2	8.8	8.0	1,976	65.6	2.5	3.8	28.1	2,077
10- 24 "	206	88.3	6.5	5.2	24,336	61.7	2.5	4.8	31.0	25,841
25- 49 "	196	89.7	5.8	4.5	51,442	61.7	2.5	4.1	31.7	54,350
50- 99 "	147	90.9	5.6	3.5	91,296	65.0	2.6	3.7	28.7	95,409
100-199 "	128	90.2	5.9	3.9	181,514	67.3	2.9	3.6	26.2	190,009
200-299 "	67	88.9	6.2	4.9	184,377	65.2	3.2	3.5	28.1	192,389
300-499 "	59	88.5	6.0	5.5	288,003	67.0	3.2	3.4	26.4	301,638
500-999 "	30	88.6	5.6	5.8	302,163	66.9	3.4	3.7	26.0	316,539
1,000 or more beds	9	87.5	5.1	7.4	165,652	67.7	3.6	3.6	25.1	171,026
Allied Special—Chronic, convalescent and rehabilitation	108	93.9	1.2	4.9	95,359	70.7	1.3	2.3	25.7	99,167
Other	54	82.2	6.1	11.7	29,783	67.6	2.4	2.7	27.3	31,965
Mental	100	80.1	0.4	19.5	272,792	72.9	0.7	2.4	24.0	274,942
Tuberculosis	37	87.2	2.0	10.8	26,399	68.1	1.0	2.0	28.9	26,916
1968										
General	881	88.5	6.6	4.9	1,512,547	66.6	3.2	3.4	26.8	1,573,715
1- 9 beds	32	83.2	10.1	6.7	2,029	66.5	2.5	3.6	27.4	2,207
10- 24 "	200	86.2	8.7	5.1	26,195	62.8	2.4	4.6	30.2	27,925
25- 49 "	201	88.8	7.0	4.2	58,995	62.8	2.4	4.0	30.8	62,311
50- 99 "	145	90.1	6.5	3.4	101,853	66.3	2.6	3.6	27.5	106,293
100-199 "	130	89.5	7.0	3.5	204,240	67.4	3.0	3.4	26.2	213,493
200-299 "	70	89.0	7.2	3.8	219,969	65.5	3.2	3.3	28.0	228,327
300-499 "	58	88.1	6.9	5.0	307,430	67.2	3.2	3.2	26.4	320,707
500-999 "	37	88.5	6.2	5.3	416,791	66.8	3.4	3.4	26.4	431,923
1,000 or more beds	8	87.1	5.9	7.0	175,045	68.0	3.6	3.1	25.3	180,529
Allied Special—Chronic, convalescent and rehabilitation	112	94.5	1.3	4.2	112,356	71.6	1.3	2.2	24.9	115,849
Other	50	79.7	9.2	11.1	32,909	65.4	2.8	2.7	29.1	34,500
Mental	105	81.6	0.4	18.0	304,872	64.7	1.1	5.4	28.8	309,402
Tuberculosis	36	87.3	2.1	10.6	26,530	68.9	1.0	2.0	28.1	27,514



* GENERAL, ALLIED SPECIAL, MENTAL AND TUBERCULOSIS.

11.—Revenues and Expenditures of Operating Public General Hospitals, by Province, 1967 and 1968

Province or Territory	Operating Hospitals	Total Revenue	Expenditures				
			Gross Salaries and Wages	Medical and Surgical Supplies	Drugs	Other	Total
	No.	$'000	p.c.	p.c.	p.c.	p.c.	$'000
1967							
Newfoundland	33	27,013	54.4	3.9	4.9	36.8	29,385
Prince Edward Island	8	5,176	60.6	3.1	3.8	32.5	5,289
Nova Scotia	44	47,207	58.1	2.9	3.4	35.6	48,196
New Brunswick	38	38,932	61.3	3.5	3.7	31.5	39,633
Quebec	135	361,027	71.2	3.1	3.6	22.1	395,748
Ontario	184	492,497	65.5	3.1	3.5	27.9	499,188
Manitoba	78	55,902	64.2	3.6	4.2	28.0	55,682
Saskatchewan	144	62,479	63.9	3.3	3.8	29.0	65,321
Alberta	114	93,957	63.4	2.9	3.3	30.4	98,946
British Columbia	87	105,365	67.8	3.4	3.6	25.2	110,455
Yukon Territory	2	118	62.1	2.3	3.5	32.1	187
Northwest Territories	7	1,086	55.4	2.3	2.4	39.9	1,248

11.—Revenues and Expenditures of Operating Public General Hospitals, by Province, 1967 and 1968—concluded

Province or Territory	Operating Hospitals	Total Revenue	Expenditures				
			Gross Salaries and Wages	Medical and Surgical Supplies	Drugs	Other	Total
1968	No.	$'000	p.c.	p.c.	p.c.	p.c.	$'000
Newfoundland	33	33,202	57.5	3.7	4.4	34.4	35,817
Prince Edward Island	8	5,491	59.7	3.2	4.0	33.1	5,671
Nova Scotia	44	53,078	59.8	2.9	3.2	34.1	54,377
New Brunswick	38	45,382	62.7	3.6	3.4	30.3	46,079
Quebec	139	410,156	70.0	3.3	3.6	23.1	442,066
Ontario	185	593,541	65.9	3.0	3.2	27.9	602,229
Manitoba	79	64,442	65.7	3.7	3.9	26.7	64,761
Saskatchewan	143	68,689	64.1	3.3	3.6	29.0	72,301
Alberta	116	108,767	64.2	2.9	3.2	29.7	114,550
British Columbia	87	128,411	69.4	3.4	3.3	23.9	134,244
Yukon Territory	2	122	56.4	2.5	6.5	34.6	222
Northwest Territories	7	1,266	57.3	3.0	2.7	37.0	1,398

Generally, salaries of hospital nursing personnel were 10.6 p.c. higher in 1968 than in 1967 and varied directly according to academic qualifications. For general-duty registered nurses employed in public general hospitals, the average annual salary varied from $5,521 for those classified as graduate nurse only, to $5,976 for those with a Bachelor's degree in nursing (Table **12**). Among graduate nurses without additional qualifications in public general hospitals, directors of nursing education received the highest average salary ($7,636) and general-duty nurses (not registered) the lowest ($4,997). On the average, general-duty nurses (registered) without additional qualifications employed in public mental hospitals earned more ($5,821) than their counterparts in other types of hospitals.

12.—Average Annual Salaries of Nursing Personnel in Public Hospitals, by Academic Qualifications, Employment Category and Type of Hospital, 1968

(Excludes shift differential pay)

Category	Average Salary	Category	Average Salary
	$		$
Academic Qualifications[1]		**Employment Category**—concluded	
Graduate nurse only	5,521	Head nurse	6,688
Clinical postgraduate training	5,869	Assistant head nurse	6,089
University diploma—one year	5,857	Teacher	6,087
Bachelor's degree in nursing	5,976	General duty registered	5,521
		General duty not registered	4,997
Employment Category[2]			
Director nursing education	7,636	**Type of Public Hospital**[3]	
Nursing director	7,545	General	5,521
Associate or assistant nursing director	7,530	Chronic, convalescent and rehabilitation	5,603
Associate or assistant director nursing education	7,304	Mental	5,821
		Tuberculosis	5,450
Nursing supervisor	7,105	Other	5,525

[1] General-duty (registered) nurse—public general hospitals. [2] Graduate nurse without additional qualifications—public general hospitals. [3] General-duty (registered) nurse without additional qualifications.

In public general hospitals, the cost per patient-day rose from $43.40 in 1967 to $48.44 in 1968, or 11.6 p.c. In both years this per diem rate was lowest in the 10-24-bed-size hospitals ($28.87 in 1967 and $32.50 in 1968); in 1967 it was highest in the 500-999-bed-size hospitals ($52.76) and in 1968 in hospitals with 1,000 or more beds ($59.31) (Table **13**). Provincially, public hospitals in Prince Edward Island maintained the lowest cost per patient-day in both years ($29.20 in 1967 and $31.65 in 1968), while, at the other extreme,

Quebec had the highest per diem rates ($53.74 in 1967 and $56.31 in 1968) (Table 14). The per capita cost of operating and maintaining all public hospitals increased by 109 p.c. during the period 1961-68, rising from $47.46 to $99.35.

13.—Patient-Day[1] Revenue and Expenditure Ratios of Operating Public Hospitals, by Size and Type of Hospital, 1967 and 1968

Type of Hospital	Operating Hospitals	Revenues		Expenditures			
		Net In-patient Earnings	Total	Gross Salaries and Wages	Medical and Surgical Supplies	Drugs	Total
	No.	$	$	$	$	$	$
1967							
General	874	36.91	41.52	28.83	1.38	1.57	43.40
1- 9 beds	32	23.96	28.63	19.73	0.74	1.15	29.95
10- 24 "	206	24.01	27.19	17.80	0.73	1.38	28.87
25- 49 "	196	25.75	28.73	18.71	0.77	1.27	30.37
50- 99 "	147	28.80	31.69	21.55	0.85	1.22	33.12
100-199 "	128	33.28	36.90	25.97	1.12	1.40	38.63
200-299 "	67	35.58	40.04	27.28	1.35	1.48	41.78
300-499 "	59	38.45	43.43	30.49	1.47	1.54	45.48
500-999 "	30	44.64	50.36	35.33	1.78	1.97	52.76
1,000 or more beds	9	43.74	49.98	34.96	1.84	1.84	51.60
Allied Special—							
Chronic, convalescent and rehabilitation	108	17.60	18.75	13.79	0.26	0.45	19.52
Other	54	44.16	53.73	39.04	1.41	1.55	57.78
Mental	100	9.84	12.12	8.91	0.08	0.29	12.23
Tuberculosis	37	20.02	22.96	15.93	0.24	0.47	23.41
1968							
General	881	41.18	46.56	32.31	1.55	1.64	48.44
1- 9 beds	32	26.25	31.08	22.56	0.84	1.20	33.74
10- 24 "	200	26.23	30.44	20.46	0.77	1.47	32.50
25- 49 "	201	28.75	32.39	21.50	0.83	1.37	34.18
50- 99 "	145	32.22	35.77	24.72	0.95	1.33	37.30
100-199 "	130	36.44	40.71	28.71	1.25	1.47	42.56
200-299 "	70	39.78	44.97	30.50	1.49	1.55	46.62
300-499 "	58	41.44	47.06	33.15	1.59	1.57	49.14
500-999 "	37	49.68	56.16	38.86	2.00	1.99	58.19
1,000 or more beds	8	50.08	57.51	40.32	2.10	1.86	59.31
Allied Special—							
Chronic, convalescent and rehabilitation	112	19.83	21.00	15.50	0.28	0.48	21.67
Other	50	53.25	65.70	45.66	1.81	1.83	69.17
Mental	105	11.53	14.13	10.79	0.08	0.36	14.34
Tuberculosis	36	23.00	26.23	18.74	0.27	0.54	27.19

[1] Adults and children.

14.—Patient-Day[1] Revenue and Expenditure Ratios of Operating Public Hospitals, by Province and Type of Hospital, 1968

Province and Type of Hospital	Revenues		Expenditures			
	Net In-patient Earnings	Total	Gross Salaries and Wages	Medical and Surgical Supplies	Drugs	Total
	$	$	$	$	$	$
Newfoundland—						
General	35.77	43.09	26.71	1.72	2.04	46.49
Allied Special—						
Chronic, convalescent and rehabilitation	12.84	14.74	11.17	0.09	0.19	15.67
Mental	..	..	..	..	..	..
Tuberculosis	24.45	25.58	15.63	0.42	0.75	25.58
Prince Edward Island—						
General	24.92	30.64	18.89	1.00	1.27	31.65
Allied Special—						
Chronic, convalescent and rehabilitation	20.86	29.20	22.50	0.84	0.34	31.05

[1] Adults and children.

14.—Patient-Day[1] Revenue and Expenditure Ratios of Operating Public Hospitals, by Province and Type of Hospital, 1968—concluded

Province or Territory and Type of Hospital	Revenues		Expenditures			
	Net In-patient Earnings	Total	Gross Salaries and Wages	Medical and Surgical Supplies	Drugs	Total
	$	$	$	$	$	$
Prince Edward Island—concluded						
Mental	9.84	10.26	7.49	0.08	0.34	10.80
Tuberculosis	30.11	32.84	19.73	0.30	0.62	32.84
Nova Scotia—						
General	38.10	43.74	26.81	1.28	1.44	44.81
Allied Special—						
Chronic, convalescent and rehabilitation	28.50	35.91	22.37	0.76	0.74	35.70
Other	55.56	61.54	38.92	1.30	1.46	61.75
Mental	7.06	15.76	11.35	0.09	0.39	15.62
Tuberculosis	37.92	40.14	28.66	0.83	0.31	40.14
New Brunswick—						
General	33.70	39.03	24.84	1.43	1.35	39.63
Allied Special—						
Chronic, convalescent and rehabilitation	24.12	25.31	17.36	0.49	0.61	25.51
Mental	0.62	8.84	6.47	0.06	0.21	8.84
Tuberculosis	23.00	24.17	14.98	0.15	0.38	24.17
Quebec—						
General	44.98	52.22	39.44	1.85	2.01	56.31
Allied Special—						
Chronic, convalescent and rehabilitation	19.25	20.24	16.00	0.27	0.54	20.92
Other	50.15	54.73	41.08	1.95	1.61	57.49
Mental	12.98	13.43	10.14	0.05	0.51	13.96
Tuberculosis	17.81	18.85	14.74	0.21	0.86	20.77
Ontario—						
General	44.23	49.23	32.99	1.52	1.58	49.94
Allied Special—						
Chronic, convalescent and rehabilitation	21.96	22.94	16.17	0.31	0.46	23.08
Other	73.97	113.80	67.88	1.87	2.76	119.38
Mental	16.94	17.44	13.66	0.09	0.26	17.24
Tuberculosis	23.86	28.96	19.56	0.22	0.24	29.28
Manitoba—						
General	38.38	42.11	27.87	1.55	1.65	42.32
Allied Special—						
Chronic, convalescent and rehabilitation	24.96	27.66	19.19	0.47	0.85	27.66
Mental	6.98	10.57	8.04	0.06	0.26	10.57
Tuberculosis	17.49	19.97	14.12	0.21	0.30	21.52
Saskatchewan—						
General	33.05	36.69	24.76	1.27	1.40	38.62
Mental	0.96	13.07	9.92	0.06	0.34	13.07
Tuberculosis	14.69	23.00	17.38	0.11	0.34	23.60
Alberta—						
General	35.74	40.83	27.63	1.25	1.39	42.97
Allied Special—						
Chronic, convalescent and rehabilitation	16.19	17.05	11.49	0.18	0.34	18.02
Other	38.17	38.81	30.90	1.60	1.28	43.64
Mental	1.72	11.20	7.75	0.04	0.25	11.09
Tuberculosis	41.70	52.17	35.72	0.23	0.28	52.17
British Columbia—						
General	37.29	40.98	29.75	1.45	1.41	42.84
Allied Special—						
Chronic, convalescent and rehabilitation	17.06	18.71	16.07	0.24	0.30	21.70
Other	44.27	72.05	49.49	1.17	2.12	77.89
Mental	12.99	12.99	9.39	0.23	0.37	12.99
Tuberculosis	25.29	25.29	19.34	0.34	0.93	25.29
Yukon Territory—						
General	39.21	49.46	50.64	2.23	5.87	89.87
Northwest Territories—						
General	26.71	32.94	20.83	1.09	0.99	36.36

[1] Adults and children.

Hospital Morbidity.—A growing need for additional information on illness in Canada was met in part by a statistical program first undertaken for 1960 involving separations (discharges and deaths) from the general and allied special hospitals. The program provided data on primary diagnosis, days of care, length of illness and age composition for all hospital patients except those in mental hospitals and tuberculosis sanatoria. (Age, sex and diagnostic information on persons treated in mental hospitals and in tuberculosis sanatoria has been available at the national level for many years but no similar information has been available for persons treated in the other kinds of hospitals.) About 100 out of every 1,000 persons are hospitalized during a year and, of these, 96 or 97 are treated in general and allied special hospitals. The 1968 data were the latest available at the time of preparation of this Subsection.

It should be noted that the picture of morbidity provided by these statistics is not, of course, complete. A total morbidity picture would include not only the morbidity covered by in-patient hospital care but also out-patient morbidity, morbidity covered by treatment outside the hospitals, and morbidity for which no treatment is received. Nevertheless, the illnesses that receive hospital care are, in general, more serious and more important than the illnesses that do not receive hospital care and this, together with the fact that the diagnostic quality of hospital morbidity statistics is very high, makes hospital morbidity statistics a most important source of information. Tables **15** and **16** present, for 1968, adult and child patients (excluding newborn) in terms of 17 diagnostic categories (Canadian) which consolidate the much more detailed international classification of diseases.

15.—Hospital Separations, Separations and Days per 100,000 Population, and Average Days Stay, by Diagnostic Category, 1968

(Excluding newborn and data for the Yukon and Northwest Territories)

Diagnostic Category[1]	Separations	Separations per 100,000 Population	Days per 100,000 Population	Average Days Stay
	No.	No.	No.	No.
Infective and Parasitic Diseases	40,438	195	2,769	14.2
Neoplasms	188,106	909	15,578	17.1
Allergic, Endocrine System, Metabolic and Nutritional Diseases	98,516	476	7,383	15.5
Diseases of the Blood and Blood-Forming Organs	19,209	93	1,325	14.3
Mental, Psychoneurotic and Personality Disorders	106,745	516	9,418	18.3
Diseases of the Nervous System and Sense Organs	170,783	825	18,469	22.4
Diseases of the Circulatory System	275,890	1,333	25,885	19.4
Diseases of the Respiratory System	505,278	2,441	16,145	6.6
Diseases of the Digestive System	444,683	2,148	21,913	10.2
Diseases of the Genito-Urinary System	290,025	1,401	12,293	8.8
Deliveries and Complications of Pregnancy, Childbirth and the Puerperium	488,581	2,360	13,698	5.8
Diseases of the Skin and Cellular Tissue	56,198	271	2,703	10.0
Diseases of the Bones and Organs of Movement	123,871	598	10,190	17.0
Congenital Malformations	33,991	164	2,344	14.3
Certain Diseases of Early Infancy	9,625	46	606	13.0
Symptoms, Senility and Ill-Defined Conditions	91,495	442	3,256	7.4
Accidents, Poisonings and Violence (nature of injury)	294,979	1,425	15,765	11.1
Supplementary Classifications for Special Admissions	16,756	81	1,191	14.7
All Causes	**3,255,169**	**15,725**	**180,931**	**11.5**

[1] Major groupings of the international classification of diseases. Information on the detailed categories included in these main groupings is available in DBS publication *Hospital Morbidity* (Catalogue No. 82-206).

16.—Hospital Separations per 100,000 Population, by Diagnostic Category and Age Group, 1968

(Excluding newborn and data for the Yukon and Northwest Territories)

Diagnostic Category[1]	Age Group					Total
	Under 15	15–24	25–44	45–64	65+	
Infective and Parasitic Diseases	309	176	123	119	185	195
Neoplasms	127	391	945	1,764	3,156	909
Allergic, Endocrine System, Metabolic and Nutritional Diseases	283	215	342	821	1,480	476
Diseases of the Blood and Blood-Forming Organs	85	39	56	102	343	93
Mental, Psychoneurotic and Personality Disorders	98	429	835	873	554	516
Diseases of the Nervous System and Sense Organs	707	312	447	1,009	3,258	825
Diseases of the Circulatory System	184	206	874	2,711	6,838	1,333
Diseases of the Respiratory System	4,993	1,332	867	1,158	2,597	2,441
Diseases of the Digestive System	1,418	1,468	2,111	3,248	4,222	2,148
Diseases of the Genito-Urinary System	488	1,066	2,010	2,049	2,408	1,401
Deliveries and Complications of Pregnancy Childbirth and the Puerperium	6	6,257	5,016	46	—	2,360
Diseases of the Skin and Cellular Tissue	308	249	211	272	368	271
Diseases of the Bones and Organs of Movement	188	356	671	1,146	1,311	598
Congenital Malformations	353	117	75	58	36	164
Certain Diseases of Early Infancy	146	1	—	—	—	46
Symptoms, Senility and Ill-Defined Conditions	397	338	423	529	719	442
Accidents, Poisonings and Violence (nature of injury)	1,224	1,696	1,276	1,344	2,306	1,425
Supplementary Classifications for Special Admissions	44	74	91	92	189	81
All Causes	**11,357**	**14,722**	**16,374**	**17,340**	**29,968**	**15,725**

[1] See footnote to Table 15, p. 368.

Subsection 2.—Notifiable Diseases*

The notifiable diseases most predominant in 1969 were venereal diseases (29,563 cases), measles (11,720 cases), streptococcal sore throat and scarlet fever (11,156 cases) and infectious and serum hepatitis (10,754 cases).

The rate of venereal disease notifications, after rising from 117.2 in 1966 to 121.0 in 1967, dropped slightly to 119.6 in 1968 and increased to 140.4 in 1969. Because of the high incidence of measles in 1969, this disease was restored to the notifiable list after having been removed in 1959. Streptococcal sore throat and scarlet fever incidence, which has long been one of the major diseases, was lower in 1969; notification rate per 100,000 population dropped from 100.9 in 1966 to 53.0 in 1969. The rate of notifications for infectious and serum hepatitis also dropped slightly to 51.1 in 1969 after rising from 29.4 in 1966 to 54.0 in 1968.

Table 17 shows the number and notification rates of notifiable diseases, by province, for 1969.

* Prepared in the Public Health Section, Health and Welfare Division, Dominion Bureau of Statistics.

17.—Reported Cases of Selected Notifiable Diseases and Rates per 100,000 Population, by Province, 1969

International List No.	Disease	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
		Number of Cases												
009.1	Diarrhoea of the newborn, epidemic	—	[1]	53	—	8	[1]	3	194	6	24	—	—	288
032	Diphtheria	—	—	—	—	1	5	4	—	22	14	2	—	48
004	Dysentery, bacillary	35	2	45	17	137	765	251	185	346	66	2	27	1,878
062.1	Encephalitis, western equine	—	[1]	—	—	—	—	1	—	—	—	—	—	1
	Food poisoning, bacterial	34	—	125	31	1	12	9	1	15	37	—	12	277
005.0	Staphylococcal	34	—	125	31	1	12	9	1	15	29	—	2	259
005.1	Botulism	—	—	—	—	—	[1]	—	—	—	8	—	10	18
	Hepatitis, infectious (including serum hepatitis)	1,130	294	419	190	678	2,315	1,030	906	1,427	2,166	173	26	10,754
070	Hepatitis, infectious	1,130	294	419	190	677	2,315	1,030	906	1,425	2,166	173	26	10,751
999.2	Hepatitis, serum	—	[1]	—	—	1	[1]	—	—	2	—	—	—	3
055	Measles	345	[1]	881	[1]	5,861	3,591	347	207	433	[1]	11	44	11,720
	Meningitis, aseptic due to enteroviruses	—	[1]	24	7	22	[1]	22	32	7	26	—	23	163
045.0	Coxsackie virus	—	[1]	—	—	2	[1]	1	—	—	1	—	—	4
045.1	ECHO virus	—	[1]	—	—	—	[1]	1	5	—	1	—	—	7
045.9	Not specified	—	[1]	24	7	20	[1]	20	27	7	24	—	23	152
036	Meningococcal infections	6	5	24	2	20	25	8	21	16	15	1	10	153
056	Rubella (German measles)	327	[1]	260	1	515	5,580	236	601	1,223	[1]	13	178	8,934
	Salmonella infections, other	117	2	192	24	789	981	82	100	214	407	—	1	2,909
003.0	With food as vehicle	—	[1]	192	8	307	[1]	37	9	10	407	—	1	971
003.9	Without mention of food as vehicle	117	2	—	16	482	981	45	91	204	—	—	—	1,938
034	Streptococcal sore throat and scarlet fever	166	4,146	1,331	84	455	1,837	207	629	986	1,250	7	58	11,156
010,011, 012–019	Tuberculosis	279	12	166	150	1,378	1,086	213	208	339	426	21	160	4,438
	Typhoid and paratyphoid fever	16	—	11	1	62	12	7	5	—	5	—	—	119
001	Typhoid	1	—	—	1	57	8	5	2	—	3	—	—	77
002	Paratyphoid	15	—	11	—	5	4	2	3	—	2	—	—	42
	Venereal diseases	431	18	1,133	435	4,906	7,101	2,932	2,563	4,103	5,107[p]	295	539	29,563
098	Gonococcal infections	422	18	761	425	4,509	6,321	2,673	2,373	3,970	4,869	290	533	27,164
090–097	Syphilis	9	—	372	10	397	779	257	190	133	237	5	6	2,395
099.0, 099.1, 099.2	Other	—	[1]	—	—	—	1	2	—	—	1	—	—	4
033	Whooping cough	121	75	188	22	333	389	10	6	34	62	2	—	1,242

		Rates Per 100,000 Population												
009.1	Diarrhoea of the newborn, epidemic	—	[1]	6.9	—	0.1	[1]	0.3	20.2	0.4	1.2	—	—	2.1
032	Diphtheria	—	—	—	—	[2]	0.1	0.4	—	1.4	0.7	13.3	—	0.2
004	Dysentery, bacillary	6.8	1.8	5.9	2.7	2.3	10.3	25.6	19.3	22.2	3.2	13.3	84.4	8.9
062.1	Encephalitis, western equine	—	[1]	—	—	—	—	0.1	—	—	—	—	—	[2]
	Food poisoning, bacterial	6.6	—	16.4	5.0	[2]	0.2	0.9	0.1	1.0	1.8	—	37.5	1.3
005.0	Staphylococcal	6.6	—	16.4	5.0	[2]	0.2	0.9	0.1	1.0	1.4	—	6.3	1.2
005.1	Botulism	—	—	—	—	—	[1]	—	—	—	0.4	—	31.3	0.1
	Hepatitis, infectious (including serum hepatitis)	219.8	267.3	54.9	30.4	11.3	31.1	105.2	94.5	91.4	104.8	1,153.3	81.3	51.1
070	Hepatitis, infectious	219.8	267.3	54.9	30.4	11.3	31.1	105.2	94.5	91.3	104.8	1,153.3	81.3	51.0
999.2	Hepatitis, serum	—	[1]	—	—	[2]	[1]	—	—	0.1	—	—	—	[2]
055	Measles	67.1	[1]	115.5	[1]	97.9	48.2	35.4	21.6	27.7	[1]	73.3	137.5	64.2
	Meningitis, aseptic due to enteroviruses	—	[1]	3.1	1.1	0.4	[1]	2.2	3.3	0.4	1.3	—	71.9	1.2
045.0	Coxsackie virus	—	[1]	—	—	[2]	[1]	0.1	—	—	[2]	—	—	[2]
045.1	ECHO virus	—	[1]	—	—	—	[1]	0.1	0.5	—	[2]	—	—	0.1
045.9	Not specified	—	[1]	3.1	1.1	0.3	[1]	2.0	2.8	0.4	1.2	—	71.9	1.1
036	Meningococcal infections	1.2	4.5	3.1	0.3	0.3	0.3	0.8	2.2	1.0	0.7	6.7	31.3	0.7
056	Rubella (German measles)	63.6	[1]	34.1	0.2	8.6	74.9	24.1	62.7	78.3	[1]	86.7	556.3	47.3
	Salmonella infections, other	22.8	1.8	25.2	3.8	13.2	13.2	8.4	10.4	13.7	19.7	—	3.1	13.8
003.0	With food as vehicle	—	[1]	25.2	1.3	5.1	[1]	3.8	0.9	0.6	19.7	—	3.1	7.2
003.9	Without mention of food as vehicle	2.8	1.8	—	2.6	8.1	13.2	4.6	9.5	13.1	—	—	—	9.2
034	Streptococcal sore throat and scarlet fever	32.3	3,769.1	174.4	13.4	7.6	24.7	21.1	65.6	63.2	60.5	46.7	181.3	53.0
010,011, 012–019	Tuberculosis	54.3	10.9	21.8	24.0	23.0	14.6	21.8	21.7	21.7	20.6	140.0	500.0	21.1
	Typhoid and paratyphoid fever	3.1	—	1.4	0.2	1.0	0.2	0.7	0.5	—	0.2	—	—	0.6
001	Typhoid	0.2	—	—	0.2	1.0	0.1	0.5	0.2	—	0.1	—	—	0.4
002	Paratyphoid	2.9	—	1.4	—	0.1	0.1	0.2	0.3	—	0.1	—	—	0.2
	Venereal diseases	83.9	16.4	148.5	69.6	82.0	95.3	299.5	267.3	262.8	247.1[p]	1,966.7	1,684.4	140.4
098	Gonococcal infections	82.1	16.4	99.7	68.0	75.4	84.8	273.0	247.4	254.3	235.6	1,933.3	1,665.6	129.0
090–097	Syphilis	1.8	—	48.8	1.6	6.6	10.5	26.3	19.8	8.5	11.5	33.3	18.8	11.4
099.0,099.1, 099.2	Other	—	[1]	—	—	—	[2]	0.2	—	—	[2]	—	—	[2]
033	Whooping cough	23.5	68.2	24.6	3.5	5.6	5.2	1.0	0.6	2.2	3.0	13.3	—	5.9

[1] Not reportable. [2] Less than 0.05 per 100,000 population.

Subsection 3.—Numbers of Physicians and Earnings of Those in Private Practice

In December 1969 there were 29,659 active civilian physicians in Canada. Over a third of them (11,201) were located in Ontario. British Columbia had the lowest population/physician ratio (653) followed by Ontario (676) and Quebec (706). The national average at December 1969 was 717 persons per physician.

Table 18 gives the provincial distribution and population/physician ratios for 1969 and also shows the trend in the national total since 1901. The figures include all junior and senior interns and residents and physicians engaged in administration, teaching, research, etc., within the medical field, as well as those in the clinical practice of medicine.

18.—Physicians and Population per Physician, 1901-69, and by Province, 1969

Source and Year	Active Civilian Physicians		Province or Territory	Active Civilian Physicians	
	Number	Population per Physician		Number	Population per Physician
Census Data—[1]			**Province, 1969—[3]**		
1901	5,475	972	Newfoundland	428	1,206
1911	7,411	970	Prince Edward Island	94	1,170
1921	8,706	1,008	Nova Scotia	971	788
1931	10,020	1,034	New Brunswick	578	1,078
1941	10,723	1,072	Quebec	8,500	706
1951	14,325	976	Ontario	11,201	676
1961	21,290	857	Manitoba	1,353	723
Department of National Health and Welfare—[2]			Saskatchewan	1,129	840
1962	23,248	808	Alberta	2,129	744
1963	24,082	795	British Columbia	3,242	653
1964	24,847	785	Yukon Territory	16	1,000
1965	25,481	779	Northwest Territories	18	1,833
1966	26,528	763			
1967	27,544	749			
1968	28,163	744			
1969[3]	29,659	717	**Canada, 1969**	**29,659**	**717**

[1] As at June 1; figures for 1901 to 1951 exclude Yukon and Northwest Territories. [2] As at Dec. 31; estimates for 1962 to 1968 for interns and residents are based on DBS data and those for other active civilian physicians are based on data contained in *List Catalogue*, Canadian Mailings Limited (Seccombe House). [3] Produced by the Department of National Health and Welfare from information supplied by Medical Marketing Systems Limited (Seccombe House).

Earnings.—The average gross professional earnings of fee-practising physicians in 1968 amounted to $42,783, which was 10.6 p.c. higher than in 1967 and 65.4 p.c. higher than in 1961. The highest average gross earnings in 1968 were reported in Alberta at $51,894. In Ontario and Newfoundland they were above the national average and in the remaining provinces they ranged from $41,848 in British Columbia to $32,584 in Prince Edward Island. Generally, throughout the eight-year period 1961-68, average gross earnings have been at a higher level in Newfoundland, Ontario and the western provinces than in Quebec and the Maritime Provinces.

The net returns to physicians, after deduction of the expenses of professional fee practice, reveal similar geographic patterns, as shown in Table 19. Net earnings for Canada as a whole averaged $28,615 in 1968, 9.7 p.c. higher than in 1967 and 73.7 p.c. higher than in 1961. The highest provincial average net income was reported by Alberta physicians at $33,221, followed by Ontario physicians at $32,098; the lowest average net income, $22,636, was reported in Prince Edward Island.

19.—Average Gross and Net Professional Incomes of Physicians and Surgeons, by Province, 1961-68

Province or Territory	1961	1963	1965	1967	1968
	Gross Professional Incomes[1]				
	$	$	$	$	$
Newfoundland[2]	27,184	27,903	31,620	36,503	43,256
Prince Edward Island	20,001	23,413	25,596	28,720	32,584
Nova Scotia	23,242	23,455	27,486	30,391	35,820
New Brunswick	24,220	26,376	29,622	35,891	38,933
Quebec	22,118	25,748	29,010	33,455	36,187
Ontario	27,206	30,641	35,752	42,721	47,427
Manitoba[3]	29,072	28,769	32,037	36,657	40,083
Saskatchewan	27,103	35,657	37,474	41,150	41,546
Alberta	29,221	30,912	35,397	43,819	51,894
British Columbia	27,867	27,670	31,675	38,609	41,848
Yukon and Northwest Territories[4]	20,083	22,007	27,812	25,750	36,850
Average for Canada	**25,862**	**28,690**	**32,799**	**38,675**	**42,783**
	Net Professional Incomes[5]				
	$	$	$	$	$
Newfoundland[2]	18,640	19,455	23,028	25,578	30,488
Prince Edward Island	13,119	15,777	17,835	20,716	22,636
Nova Scotia	16,070	15,839	19,146	21,480	24,642
New Brunswick	16,288	17,701	20,251	24,662	27,544
Quebec	14,454	16,696	20,532	23,133	25,112
Ontario	17,682	20,492	24,188	29,354	32,098
Manitoba[3]	15,829	18,178	19,681	23,229	26,108
Saskatchewan	15,843	21,625	23,530	24,697	25,175
Alberta	17,925	19,111	22,681	27,591	33,221
British Columbia	17,067	17,464	20,121	25,169	26,239
Yukon and Northwest Territories[4]	15,594	16,480	15,731	13,200	18,000
Average for Canada	**16,472**	**18,688**	**22,064**	**26,093**	**28,615**

[1] Includes wages and salaries for professional services. [2] Excludes physicians employed on a salaried basis under the Cottage Hospital Medical Service and by subsidized voluntary prepayment plans. The estimated number of such excluded physicians in 1965 was 95. [3] Excludes some physicians employed on a salaried basis in private group-practice. The estimated number of such excluded physicians in 1968 was 59. [4] Data for the Yukon and Northwest Territories are posted for record only. [5] Includes net professional fees after deducting expenses of practice, and wages and salaries incidental to fee practice.

PART II.—WELFARE AND SOCIAL SECURITY

Responsibility for social welfare is shared by all levels of government. Comprehensive income maintenance measures such as the Canada Pension Plan, old age security pensions, the guaranteed income supplement program, family allowances, youth allowances and unemployment insurance, where nation-wide co-ordination is required, are administered federally. The Federal Government gives substantial aid to the provinces in meeting the costs of public assistance and also provides services for special groups such as veterans, Indians, Eskimos and immigrants. The Department of National Health and Welfare is generally responsible for federal welfare matters, although the Departments of Veterans Affairs, Indian Affairs and Northern Development, and Manpower and Immigration operate programs for specific groups.

Administration of welfare services is primarily the responsibility of the provinces but the provision of services is often assumed by local authorities, generally with financial aid from the province.

Co-ordination in welfare matters between different levels of government has expanded considerably in recent years and in various ways. These include meetings of ministers, deputy ministers and other officials concerned with the development of programs and administrative arrangements. The agreements that have been reached provide, among other things, for the exchange of statistical and other information between the two levels of government and for the provision, at the request of the provinces, of a variety of consultative services. A federal-provincial meeting of welfare ministers in January 1969 authorized the appointment of three joint task forces to study welfare programs and assistance and to make recommendations in specified areas.

Co-ordination in welfare matters between government and voluntary authorities is facilitated by the National Council of Welfare. Until January 1970, the Council was mainly a government body presided over by the Deputy Minister of National Health and Welfare with the Deputy Minister of Welfare of each province included among its members. It has now been reconstituted as a citizens' advisory council and consists of 21 private citizens about half of whom have been selected from organizations of consumers of welfare services and the remainder from institutions involved, directly or indirectly, in providing welfare services. The Council is responsible for advising the Minister of National Health and Welfare on such matters related to welfare as it deems appropriate as well as to consider matters referred to it by the Minister.

Section 1.—Federal Government Programs*

Subsection 1.—Canada Pension Plan*

The Act establishing the Canada Pension Plan received Royal Assent on Apr. 3, 1965 and was proclaimed in force on May 5 of the same year. Collection of contributions commenced in January 1966, in January 1967 the first benefits were paid in the form of retirement pensions, in February 1968 the first survivors' benefits were paid, and in February 1970 the first disability benefits were paid. The Plan enables millions of people to make financial provision for their retirement and to protect themselves and their dependants or survivors against loss of income in the event of their disability or death.

The Plan is universally applicable throughout Canada, except in the Province of Quebec, where a comparable pension plan has been established. The Canada and Quebec Pension Plans, however, are closely co-ordinated and operate virtually as a single program. Together, they cover almost all members of the labour force in Canada. Benefit credits accrued under the Canada or Quebec Plans are portable throughout Canada. A contributor who may have worked for more than one employer during his lifetime or who may be self-employed for all or part of his working life will accumulate pension credits regardless of where he may work in Canada. Benefits under the Plan are payable to beneficiaries whether or not they live in Canada. Every contributor must have a social insurance number so that his pensionable earnings may be accurately recorded for benefit purposes.

The maximum pensionable earnings for a year were $5,000 for both 1966 and 1967, $5,100 for 1968, $5,200 for 1969, and $5,300 for 1970. From 1971 to 1975, the figure of $5,300 will be adjusted in line with changes in the Pension Index which, in turn, is based on the Consumer Price Index. Beginning in 1976, the maximum pensionable earnings for a year will be adjusted in accordance with changes in the Earnings Index to reflect changes in average wage and salary levels in Canada.

To participate in the Plan, a person must be between the ages of 18 and 70 and earn more than $600 yearly as an employee, or at least $800 if he is self-employed. As of 1970 contributions are made on earnings between $600 and $5,300 a year in the case of both employees and self-employed persons. Employees contribute at the rate of 1.8 p.c. and

* See Appendix III for recommendations made in a White Paper on income security tabled in the House of Commons on Nov. 30, 1970, which will, if approved by Parliament, affect payments under the Canada Pension Plan, Old Age Security and Income Supplement and Family Allowances plans.

matching contribution is made by their employers; self-employed persons contribute at the rate of 3.6 p.c. No contributions are to be made by persons while they are receiving disability pensions. Although contributions are made on annual earnings between $600 and the maxima referred to above, rates of benefit are calculated on total earnings up to that maximum. That is, while contributions are not paid on the first $600 of annual earnings, that amount is nevertheless included in the calculation of benefits.

The earnings-related component of the benefit which a person is entitled to receive under the Canada Pension Plan is based on the contributor's average pensionable earnings. Before this average is calculated, however, all earnings are adjusted in line with the applicable maximum on pensionable earnings during the benefit year. Thus, when a benefit first becomes payable, the earnings on which it is based are related to the maximum on pensionable earnings at that time rather than when the earnings were received.

Benefits are classified under three main headings: Retirement Pensions; Survivors' Benefits, consisting of a widow's pension, a disabled widower's pension, orphans' benefits, and a lump sum death benefit; and Disability Benefits comprising pensions for disabled contributors and benefits for their dependent children.

From 1970 on, *Retirement Pensions* are payable to contributors who are 65 years of age or over provided that, if under age 70, they are retired from regular employment. For contributors who have reached age 70, retirement pensions are payable regardless of whether or not they are retired. They become payable at their full rate beginning in January 1976. This rate amounts to 25 p.c. of what the updated pensionable earnings of contributors have averaged since Jan. 1, 1966, or from age 18, whichever comes later.

Contributors who become eligible for retirement pensions prior to 1976 receive reduced amounts. In the calculation of retirement pensions that commence during this period, pensionable earnings are averaged over ten years or 120 months. The only exception is where a disability pension has been paid, in which case the time during which that pension was in pay is deducted from the ten years and the remaining period used for averaging purposes. In the calculation of retirement pensions that commence after 1975, provision is made to assist the contributor who may have had periods of low or no earnings during his contributory period. This is accomplished by dropping out the number of months during which contributions may have been made after age 65, either by using the pensionable earnings in those months in place of earlier periods of lesser or no earnings, or by dropping such pensionable earnings out of the calculation if they are less favourable to him. Also dropped out of the calculation are up to 15 p.c. of the number of months he could have contributed before age 65 and the earnings in an equal number of months, although the drop-out must not reduce the number of months for averaging purposes to fewer than 120.

A person under 70 years of age who is in receipt of a retirement pension must meet an earnings test. In 1970, the maximum annual remuneration from employment he may earn without affecting the amount of his pension is $900. Should his yearly earnings exceed this figure, his pension is reduced as follows. When annual employment earnings are between $900 and $1,500, the reduction will equal 50 p.c. of the amount over $900, or an amount of up to $300 per year; if earnings exceed $1,500, the amount deducted will be $300 plus the actual amount earned over $1,500. However, the amount of pension is not subject to reduction for any month in which the pensioner does not earn over $75. At age 70, a contributor is entitled to receive the full amount of his retirement pension regardless of the amount of his earnings.

Survivors' Benefits became payable in February 1968. They are paid to or on behalf of the survivors of a deceased contributor who has made contributions for the minimum qualifying period, which is three years for those whose benefits commence before 1975.

A woman who is widowed between ages 45 and 65 is entitled to a widow's pension consisting of the flat-rate payment plus 37½ p.c. of her husband's retirement pension. The flat-rate component is equal to $25 multiplied by the ratio of the Pension Index for

the year in which the contributor dies to the Pension Index for 1967. Thus, for 1970, the flat-rate component is $26.53. Should her husband not be in receipt of a retirement pension at the time of his death, such a pension is calculated in prescribed manner for the purposes of computing the amount of the widow's pension. If a woman is widowed under age 45, the same pension is paid provided she has dependent or disabled children or is herself disabled. If she does not meet any of these requirements, her pension is reduced by an amount equal to 1/120 for each month she is less than age 45 at the time of her husband's death. Accordingly, if a woman is widowed at age 35 or less, and has no dependent or disabled children and is not herself disabled, she will not receive a widow's pension until she reaches 65 years of age, unless she becomes disabled in the meantime.

A widow aged 65 or over receives a widow's pension equal to 60 p.c. of her husband's retirement pension, regardless of her age at the time her husband died or whether she was receiving a widow's pension before she became 65. Again, if her husband was not in receipt of a retirement pension at the time of his death, one is calculated in prescribed manner in order to compute the amount of the widow's pension. Women who receive widows' pensions may also have contributed to the Canada Pension Plan themselves and consequently may be entitled to retirement or disability pensions in their own right. In such cases, the widow's pension will be combined with the other pension, in accordance with a prescribed formula, but the combined total cannot exceed the maximum retirement pension payable under the Act.

Orphans' benefits are payable on behalf of a deceased contributor's unmarried dependent children. The rate for each of the first four children is equal to the flat-rate component of the widow's pension ($26.53 for 1970); for more than four children the total benefit, which is divided equally among the children, is the sum of $26.53 for each of four and half of that amount for each child in excess of four. Benefits are payable until the child reaches age 18 or up to age 25 if he continues to attend school or university full time.

A disabled widower's pension is payable where he was wholly or substantially dependent on his wife for financial support at the time of her death. The test of disability is the same as that for a person who claims a disability pension and the pension formula is the same as that for a disabled widow.

When a contributor dies, a lump sum death benefit equal to six times his monthly retirement pension is paid to his estate. This benefit is subject to a maximum of 10 p.c. of the maximum on pensionable earnings which, for 1970, would mean a payment not exceeding $530. Should a contributor not be in receipt of a retirement pension at the time of his death, a calculation is made in prescribed manner for purposes of establishing the amount of the death benefit.

Disability Pensions became payable in 1970. A contributor is considered to be disabled if he has a physical or mental disability that is so severe and likely to continue so long that he cannot regularly engage in any substantially gainful occupation. Disability pensions, plus benefits for the dependent children of disabled contributors, are available provided contributions have been made to the Plan for the required minimum period, which is five years for contributors whose disability pensions will commence before 1976. The amount of the pension consists of a flat-rate payment equal to the flat-rate component of a widow's pension plus 75 p.c. of what the contributor's monthly retirement pension would have been had he reached age 65 when his disability pension commenced. Benefits are payable on behalf of a disabled contributor's dependent children at the same rates and under essentially the same circumstances as the orphans' benefits.

All monthly benefits are adjusted upward annually if changes in the Pension Index warrant it. Benefits in payment in 1967 were increased by 2 p.c. effective January 1968, those in payment in 1968 were increased by 2 p.c. effective January 1969, and those in payment in 1969 were increased by 2 p.c. effective January 1970.

Any contributor or beneficiary under the Plan has the right to appeal decisions with which he is dissatisfied. Appeals by employees and employers regarding coverage and

contributions are first made to the Minister of National Revenue and, if the individual is not satisfied with the Minister's decision, he may appeal to the Pension Appeals Board whose decision is final. For self-employed persons, appeals with reference to the assessment of their earnings for Canada Pension Plan purposes are treated in the same way as appeals under the Income Tax Act. With respect to benefits, there is a three-stage appeal procedure: first, to the Minister of National Health and Welfare; secondly, to a Review Committee; and thirdly, to the Pension Appeals Board whose decision is final.

The legislation provides for the investment of the funds that accrue from monthly contributions, less the estimated amounts required to pay benefits and administrative costs over a three-month period. These funds are made available to each province on the basis of the relationship between the contributions made to the Plan by and on behalf of residents of that province and the total contributions made to the Plan. Funds not borrowed by the provinces are invested in federal securities. The Canada Pension Plan is entirely self-supporting in that all benefits and all costs incurred in the administration of the program are financed solely from the contributions made by employees, employers and self-employed persons and the interest earned from the investment of funds.

An Advisory Committee representing employers, employees, self-employed persons and the public, which was established in 1967, reviews from time to time the operations of the Plan, the state of the investment fund and the adequacy of coverage and benefits, and reports to the Minister of National Health and Welfare. In addition, a report on its activities is included in the annual report on the Plan. The legislation authorizes arrangements to be made with other countries to achieve as full coverage of persons in the labour force in Canada as is possible and to ensure the portability of pension credits between Canada and the countries concerned.

The Minister of National Health and Welfare is responsible for the administration of all parts of the program except coverage and the collection of contributions which come under the jurisdiction of the Minister of National Revenue. The Unemployment Insurance Commission is responsible for the assignment of social insurance numbers and for the maintenance of the Central Index. The Department of Finance is responsible for the administration of the Canada Pension Plan Account and the Canada Pension Plan Investment Fund. The Department of Supply and Services gives temporary assistance to the Department of National Health and Welfare in the operation of the electronic data processing service which is required to maintain the records of earnings of contributors and to calculate benefits payable under the Plan. The Chief Actuary, Department of Insurance, is responsible for the preparation of reports on the future financial progress of the Plan and on the effect on the Fund of proposed amendments to the Plan.

The Canada Pension Plan Administration of the Department of National Health and Welfare consists of a head office establishment in Ottawa and a network of 38 District Offices located in the major population centres in Canada outside the Province of Quebec and 104 local offices, the latter on a part-time basis.

1.—Canada Pension Plan Account, Years Ended Mar. 31, 1966-70

NOTE.—Due to rounding, figures may not add to totals shown.

(Millions of dollars)

Year Ended Mar. 31—	Revenue				Net Expenditure			Excess of Revenue	Balance in Account
	Contributions	Interest on Investments	Other	Total	Benefits	Administration	Total		
1966	94.9	—	—	94.9	—	5.5	5.5	89.4	89.4
1967	587.2	11.0	1.7	599.9	—	8.4	8.4	591.5	680.9
1968	640.2	42.2	2.2	684.7	1.3	11.5	12.8	671.9	1,352.8
1969	697.6	81.4	3.0	785.0	15.6	14.5	30.0	755.0	2,107.8
1970p	745.6	139.7	4.1	889.5	47.3	16.3	63.6	825.9	2,933.5

2.—Canada Pension Plan Investment Fund Investments, by Province, Years Ended Mar. 31, 1966-70

NOTE.—Due to rounding, figures may not add to totals shown.
(Millions of dollars)

Securities of or Guaranteed by—	1965-66	1966-67	1967-68	1968-69	1969-70	Total Investments
	INVESTMENTS MADE IN PERIOD					
Newfoundland	0.7	11.0	12.0	14.2	15.6	53.5
Prince Edward Island	0.1	1.9	2.3	2.9	3.2	10.4
Nova Scotia	1.2	21.4	25.2	29.2	31.6	108.7
New Brunswick	1.0	16.7	19.3	21.8	24.2	83.0
Quebec	—	0.4	1.9	2.4	3.1	7.7
Ontario	20.1	332.6	375.9	412.0	445.8	1,586.4
Manitoba	2.1	34.9	39.4	42.3	47.7	166.3
Saskatchewan	1.4	24.5	29.7	35.9	40.4	131.8
Alberta	3.1	51.1	59.2	68.4	77.1	258.8
British Columbia	5.1	84.4	96.6	107.5	117.2	410.7
Federal Government	0.1	1.8	3.8	5.6	4.1	15.4
Totals, All Jurisdictions	**34.9**	**580.7**	**665.3**	**742.2**	**809.8**	**2,832.7**
	BALANCE IN FUND AT END OF PERIOD					
Totals, All Jurisdictions	**34.9**	**615.5**	**1,280.8**	**2,022.9**	**2,832.7**	**...**

3.—Benefits Paid under the Canada Pension Plan, by Type of Benefit and by Province, March 1970

NOTE.—During the month of March 1970, 100 disability pensions were paid, as well as 85 benefits for children disabled contributors.

Province or Territory	Retirement Pensions	Widows' Pensions	Disabled Widowers' Pensions	Benefits for—		Combined Pensions	Death Benefits	All Benefit
				Orphans Under Age 18	Orphans Age 18 and Over			
	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland	1,915	370	—	642	77	—	34	3,038
Prince Edward Island	685	119	—	192	33	—	17	1,046
Nova Scotia	5,118	1,157	2	1,298	245	—	89	7,909
New Brunswick	3,830	855	1	1,063	203	—	72	6,024
Quebec	426	144	1	176	28	—	10	785
Ontario	60,907	11,316	9	9,399	2,072	8	1,127	84,838
Manitoba	8,697	1,334	2	1,211	247	1	119	11,611
Saskatchewan	6,559	1,146	3	1,235	201	—	106	9,250
Alberta	9,424	1,792	2	2,097	367	—	150	13,832
British Columbia	17,323	2,700	3	2,694	450	1	214	23,385
Yukon Territory	31	14	—	20	1	—	2	68
Northwest Territories	24	5	—	13	1	—	1	44
Totals, All Areas	**114,939**	**20,952**	**23**	**20,040**	**3,925**	**10**	**1,941**	**161,830**

Subsection 2.—Old Age Security and Guaranteed Income Supplement*

Old Age Security.—Under the Old Age Security Act of 1951, as amended, the Federal Government pays a monthly pension to all persons aged 65 or over who meet the necessary residence qualifications. Until 1966 the pension was payable to those aged 70 or over but an annual one-year reduction in pensionable age from 70 to 65 was completed in 1971

* See footnote to p. 374.

Until 1967 the pension amounted to $75 a month but in 1968 and succeeding years the amount may be adjusted in line with changes in the Pension Index developed for the Canada Pension Plan (see p. 374); it reached $79.58 a month in January 1970.

The old age security pension is payable to a person of attained age who has resided in Canada for ten years immediately preceding the approval of his application for the pension. Any gaps in the ten-year period may be offset if the applicant had been present in Canada in earlier years for periods of time equal in total to double the length of the gaps; in this case, however, the applicant must also have resided in Canada for one year immediately before the month in which his application for pension may be approved. The pension is also payable to persons of attained age who have left Canada before reaching that age but who have had 40 years of residence in Canada since age 18. A pensioner may absent himself from Canada and continue to receive payments. If he has lived in Canada for 25 years since his 21st birthday, payment outside of Canada may continue indefinitely; if not, payment is continued for six months, in addition to the month of departure, and is then suspended, to be resumed only with the month in which he returns to Canada.

The program is administered by the Department of National Health and Welfare through regional offices located in each provincial capital, to which application is made for pension. The regional office in Edmonton administers accounts for and receives applications from residents of the Yukon and the Northwest Territories. The old age security plan is financed through a 3-p.c. sales tax, a 3-p.c. tax on corporation income and, subject to a limit of $240 a year, a 4-p.c. tax on taxable personal income. The revenues from these sources are paid into a separate fund called the Old Age Security Fund, from which are paid the old age security pensions and, from Jan. 1, 1967, benefits under the guaranteed income supplement program.

Guaranteed Income Supplement.—A 1966 amendment to the Old Age Security Act provides for the payment of a monthly guaranteed income supplement to old age security pensioners who have little or no income other than the pension. The supplement is limited to pensioners born on or before Dec. 31, 1910, who by reason of age are or will be unable to benefit substantially from the Canada or Quebec Pension Plans. The program commenced on Jan. 1, 1967. Beginning at that date, the maximum supplement was $30 a month; in any year after 1967, it is to be 40 p.c. of the amount of the flat-rate old age security pension. With the escalation of the latter pension effected January 1970, the maximum supplement was increased to $31.83 a month. Thus, pensioners with only the old age security pension receive a guaranteed annual income of $1,336.92 for a single pensioner and, for a married couple who are both pensioners, $2,673.84. This consists of the monthly $79.58 pension and the monthly supplement of $31.83 which is subject to an income test.

Pensioners with income in addition to their old age security pension may receive partial benefits. The maximum supplement is reduced by $1 a month for every full $2 a month of income over and above the old age security pension and any supplement that may have been received. Income for this purpose is the same as that computed in accordance with the Income Tax Act. In the case of a married couple, each is considered to have one half of their combined income. Where one spouse will not be receiving an old age security pension at any time in the current year, six times the amount of the monthly old age security pension is deducted from one half of the combined income in calculating the income of the pensioner for guaranteed income supplement purposes.

Payments will not be made to married couples unless both spouses submit returns. However, in order to prevent undue hardship when no statement of income is obtainable from one spouse, the other, in certain circumstances, may be deemed to be single for purposes of determining income. Furthermore, although marital status is determined as at Dec. 31 of the preceding year, even if this status should change in the current year, a special provision allows a person to be deemed either married or single in the preceding year.

If a pensioner who is in receipt of a supplement leaves Canada, the supplement will be paid for the month of departure and for six further months. Payment will then be discontinued until his return.

The guaranteed income supplement program is administered in conjunction with the old age security pension program. An application for the supplement is sent to each person when he begins to receive the old age security pension and subsequently at the beginning of each calendar year. Entitlement is re-assessed each year on the basis of the pensioner's income in the preceding year.

4.—Old Age Security and Guaranteed Income Supplement Statistics, by Province, Year Ended Mar. 31, 1970 with Totals for 1966-70

Province or Territory	Old Age Security		Guaranteed Income Supplement	
	Pensioners in March	Net Pensions Paid During Fiscal Year	Pensioners in March	Net Supplements Paid During Fiscal Year
	No.	$	No.	$
Newfoundland	31,628	27,962,478	24,835	8,412,681
Prince Edward Island	12,285	10,991,947	8,612	2,776,288
Nova Scotia	70,004	62,651,195	41,408	13,467,226
New Brunswick	52,935	47,287,051	31,730	10,432,556
Quebec	394,138	342,436,313	224,409	73,375,872
Ontario	615,111	540,908,249	247,099	77,154,415
Manitoba	93,497	82,432,414	47,575	15,545,125
Saskatchewan	92,168	82,051,152	43,846	14,197,485
Alberta	112,921	96,818,953	56,893	20,387,664
British Columbia	194,709	172,400,945	85,552	27,401,086
Yukon Territory	458	407,373	239	88,942
Northwest Territories	785	708,447	637	239,288
Canada 1970	**1,670,639**	**1,467,056,517**	**812,835**	**263,478,628**
1969	**1,504,862**	**1,296,849,281**	**775,034**	**244,470,268**
1968	**1,366,210**	**1,153,283,794**	**714,648**	**234,835,151**
1967	**1,229,561**	**1,033,408,230**	**505,240**	**39,597,478**
1966	**1,105,776**	**927,299,487**	[2]	[2]

[1] Three months; guaranteed income supplement program commenced Jan. 1, 1967. [2] Program not yet introduced.

5.—Numbers and Percentages of Old Age Security (OAS) Pensioners with or without Guaranteed Income Supplement (GIS), by Province, May 1970

Province or Territory	Numbers of OAS Pensioners				Percentages of OAS Pensioners			
	Without GIS	With Partial GIS	With Full GIS	Total	Without GIS	With Partial GIS	With Full GIS	Total
Newfoundland	6,855	5,601	19,251	31,707	21.6	17.7	60.7	100.0
Prince Edward Island	3,763	3,037	5,434	12,234	30.8	24.8	44.4	100.0
Nova Scotia	28,707	15,623	26,196	70,526	40.7	22.2	37.1	100.0
New Brunswick	21,364	10,641	21,297	53,302	40.1	20.0	39.9	100.0
Quebec	173,950	74,589	149,548	398,087	43.7	18.7	37.6	100.0
Ontario	370,937	124,910	123,198	619,045	59.9	20.2	19.9	100.0
Manitoba	46,368	21,919	25,927	94,214	49.2	23.3	27.5	100.0
Saskatchewan	48,242	19,159	25,426	92,827	52.0	20.6	27.4	100.0
Alberta	57,165	24,469	32,753	114,387	50.0	21.4	28.6	100.0
British Columbia	111,166	38,850	46,233	196,249	56.6	19.8	23.6	100.0
Yukon Territory	218	34	210	462	47.2	7.4	45.4	100.0
Northwest Territories	142	72	583	797	17.8	9.0	73.2	100.0
Canada	**868,877**	**338,904**	**476,056**	**1,683,837**	**51.6**	**20.1**	**28.3**	**100.0**

Subsection 3.—Family Allowances*

The Family Allowances Act of 1944 assists in providing equal opportunity for all Canadian children. The allowances do not involve a means test and are paid from the Federal Consolidated Revenue Fund. They do not constitute taxable income but there is a smaller income tax exemption for children eligible for allowances.

Allowances are payable in respect of every child under age 16 who was born in Canada, or who has been a resident of the country for one year, or whose father or mother has been domiciled in Canada from a date three years immediately prior to the date of birth of the child. Payment is made by cheque each month, normally to the mother, although any person who substantially maintains the child may be paid the allowance on his behalf. Allowances are paid at the monthly rate of $6 for each child under 10 years of age and $8 for each child age 10 or over but under 16 years. If the allowances are not spent for the purposes outlined in the Act, payment may be discontinued or made to some other person or agency on behalf of the child. Allowances are not payable for any child who fails to comply with provincial school attendance legislation, who ceases to be maintained by a parent or who ceases to be a resident of Canada, or on behalf of a girl who is married and under age 16.

The program is administered by the Department of National Health and Welfare through regional offices located in each provincial capital. The Regional Director located at Edmonton also administers the accounts of residents in the Yukon and Northwest Territories.

The Federal Government pays family assistance, at the rates applicable for family allowances, for each child under 16 years of age resident in Canada and supported by an immigrant who has landed for permanent residence in Canada, or by a Canadian returned

* See footnote to p. 374.

Family allowance cheques are of considerable assistance to this mother in her determination to provide adequate and nutritious food for her children.

to Canada to reside permanently. The assistance, which is payable monthly for the first year of the child's residence in Canada, is intended to bridge the gap until the child becomes eligible for family allowances. The eligibility requirements, other than that relating to residence, are the same for family assistance as for family allowances.

The Province of Quebec introduced its own family allowances program, supplementing the federal scheme, under legislation enacted in 1967 (see p. 390), and Newfoundland in 1966 introduced a program called the Parents' Supplement (Schooling Allowance), under which payments are made for children attending school (see p. 390).

6.—Family Allowances Statistics, by Province, Year Ended Mar. 31, 1970 with Totals for 1966-70

Province or Territory	Families Receiving Allowances in March	Children for Whom Allowances Paid in March	Average Number of Children per Family in March	Average Allowances[1]		Net Total Allowances Paid during Fiscal Year
				Per Family	Per Child	
	No.	No.	No.	$	$	$
Newfoundland	74,922	209,866	2.80	18.89	6.75	17,048,134
Prince Edward Island	14,328	37,966	2.65	18.03	6.80	3,120,546
Nova Scotia	108,451	257,330	2.37	16.16	6.82	21,145,467
New Brunswick	86,141	218,999	2.54	17.34	6.83	18,070,949
Quebec	837,683	1,963,792	2.34	16.01	6.84	161,788,099
Ontario	1,065,683	2,363,271	2.22	14.98	6.75	190,540,451
Manitoba	132,530	307,626	2.32	15.78	6.80	25,165,427
Saskatchewan	128,328	312,003	2.43	16.58	6.82	25,937,454
Alberta	231,903	539,975	2.33	15.90	6.82	44,001,049
British Columbia	289,747	634,712	2.19	15.01	6.85	51,646,363
Yukon Territory	2,673	6,087	2.28	15.32	6.72	462,972
Northwest Territories	5,167	13,675	2.65	18.26	6.89	1,122,937
Canada 1970	**2,977,556**	**6,865,302**	**2.31**	**15.68**	**6.79**	**560,049,848**
1969	**2,937,084**	**6,882,900**	**2.34**	**15.93**	**6.81**	**560,186,052**
1968	**2,888,101**	**6,901,486**	**2.39**	**16.19**	**6.77**	**558,774,458**
1967	**2,833,941**	**6,882,874**	**2.43**	**16.42**	**6.76**	**555,794,947**
1966	**2,785,636**	**6,895,057**	**2.46**	**16.59**	**6.73**	**551,734,824**

[1] Based on gross payment for March.

Subsection 4.—Youth Allowances

Legislation providing for a program of youth allowances became effective Sept. 1, 1964. The Federal Government does not provide youth allowances in Quebec, which has had its own program, called Schooling Allowances, since 1961. With the introduction of the federal scheme, Quebec agreed to make certain changes in its schooling allowance program so that it would be comparable to the federal measure; since then, that province has been compensated by a tax abatement adjusted to equal the amount that the Federal Government would otherwise have paid in allowances to Quebec residents. The federal youth allowances and the Quebec schooling allowances programs cover all eligible young people in Canada.

Under the federal program, monthly allowances of $10 are payable in respect of all dependent children aged 16 and 17 who are receiving full-time educational training or are precluded from doing so by reason of physical or mental infirmity. Both the parent or guardian and the child must normally be physically present and living in a province other than Quebec. The allowance is not payable to a parent who resides in Quebec or outside Canada, regardless of where his child may be attending school. However, a child may attend school in Quebec or outside Canada, or, if disabled, receive care or training in Quebec or outside Canada and still be considered eligible, on the basis that he is a resident of a province other than Quebec but is temporarily absent.

Allowances normally commence with the month following that in which family allowances cease and continue until the school year terminates. They are paid retroactively for

he summer months when the child returns to school at the commencement of the new chool year, although allowances for a disabled child not attending school are payable ontinuously throughout the year. Should a student leave school, leave the country ermanently, cease to be maintained, take up residence in Quebec, or die, the allowance eases. Otherwise, the youth allowance continues until the end of the month in which the oung person reaches age 18. Youth allowances are considered not to be income for any urpose of the Income Tax Act.

The program is administered by the Department of National Health and Welfare. he national director of the family allowances and old age security programs is also re-ponsible for administering youth allowances, assisted by regional directors located in each f the provincial capitals other than Quebec City. The costs of youth allowances are met rom the Consolidated Revenue Fund.

7.—Youth Allowances Statistics, by Province, Year Ended Mar. 31, 1970 with Totals for 1966-70

Province or Territory	Youths for Whom Allowances Paid in March			Net Total Allowances Paid during Fiscal Year
	Attending School Full-Time	Having Physical or Mental Infirmity	Total Youths	
	No.	No.	No.	$
ewfoundland	17,886	160	18,046	1,967,468
rince Edward Island	3,750	15	3,765	422,204
ova Scotia	26,467	117	26,584	3,002,805
ew Brunswick	22,260	108	22,368	2,561,437
ntario	232,114	1,157	233,271	26,653,435
anitoba	31,423	61	31,484	3,601,849
askatchewan	33,258	89	33,347	3,783,018
lberta	51,069	195	51,264	5,823,362
ritish Columbia	63,381	173	63,554	7,195,255
ukon Territory	313	1	314	51,672
orthwest Territories	479	—	479	39,394
Canada 1970	**482,400**	**2,076**	**484,476**	**55,101,899**
1969	**460,055**	**2,330**	**462,385**	**52,457,272**
1968	**432,051**	**2,514**	**434,565**	**49,426,980**
1967	**409,591**	**2,530**	**412,121**	**47,395,633**
1966	**402,802**	**1,992**	**404,794**	**46,468,550**

Section 2.—Federal-Provincial Programs

Subsection 1.—Canada Assistance Plan

The Canada Assistance Plan was enacted in 1966 as a comprehensive public assist-nce measure to complement other income security measures. It provides, under agree-ents with the provinces, for federal contributions of 50 p.c. of the costs of assistance to ersons in need and of the costs of certain welfare services. The plan has largely replaced he Unemployment Assistance Act, 1956, although the latter will continue in effect in some rovinces for an interim period with respect to certain programs that utilize a means test nd are being phased out but that are not covered under the Canada Assistance Plan. All rovinces had signed agreements under the plan by the end of August 1967, and the Yukon erritory signed in December 1969. The arrangements for contracting out of certain hared-cost programs that were introduced in 1965 under the Established Programs (Interim rrangements) Act are applied to Quebec's agreement. It is provided that the provinces ay discontinue their programs of old age assistance, blind persons allowances and disabled ersons allowances and instead give aid under their general programs with costs shared nder the plan.

The plan extends federal sharing to include the following costs, which were not shared under the Unemployment Assistance Act; assistance to needy mothers with dependent children, maintenance of children in the care of provincially approved child welfare agencies, health care services to needy persons, and the extension of welfare services to prevent or remove causes of dependency or to assist recipients in achieving self-support. The only eligibility requirement specified is that of need, which is determined through an assessment of budgetary requirements as well as of income and resources. A province must not require previous residence as a condition of eligibility for assistance or for continued assistance; rates of assistance and eligibility requirements are set by the province so that they may be adjusted to local conditions and the needs of special groups; and the provinces must establish procedures for appeal from decisions that relate to the provision of assistance.

The Federal Government reimburses the provinces for 50 p.c. of the cost of assistance provided to persons in need and for 50 p.c. of certain costs of improving or extending welfare services. "Assistance" includes any form of aid to or on behalf of persons in need for the purpose of providing basic requirements such as food, shelter and clothing; items necessary for the safety, well-being or rehabilitation of a person in need, or for a handicapped person; special home care such as a home for the aged, a nursing home or a welfare institution for children; travel and transportation; funerals and burials; health care services; welfare services purchased by or at the request of provincially approved agencies; and comfort allowances for inmates of institutions.

The cost of improving and extending welfare services may be calculated either (1) as the amount by which the cost of providing welfare services exceeds that of the period from Apr. 1, 1964 to Mar. 31, 1965 or (2) as the cost of employing persons who are engaged wholly or mainly in the performance of welfare service functions and who are employed in positions filled after Mar. 31, 1965. Included for shareable purposes are the costs of salaries and employee benefits, travel, research, consultation, fees for conferences and seminars and certain costs of staff training. The sharing of cost of work activity projects that prepare persons for employment and the extension of provincial welfare services to Indians on reserves, on Crown lands or in unorganized territory are governed by special agreements.

8.—Federal Share of Canada Assistance Plan Costs, by Province, Years Ended Mar. 31, 1969 and 1970

NOTE.—Includes costs of public assistance payments, child welfare maintenance, health care and extension and improvements in welfare services and also payments made for claims received during the fiscal year for expenditures made in the previous fiscal year.

Province	1968-69	1969-70	Province or Territory	1968-69	1969-70
	$	$		$	$
Newfoundland	21,061,808	20,288,580	Saskatchewan	14,129,601	17,233,414
Prince Edward Island	2,549,257	3,292,523	Alberta	28,634,906	31,334,876
Nova Scotia	11,022,716	15,245,837	British Columbia	37,215,888	43,086,262
New Brunswick	9,905,988	11,795,292	Yukon Territory	—	152,889
Quebec	[1]	[1]			
Ontario	118,303,660	131,838,661			
Manitoba	13,981,779	19,260,412	**Totals**	**256,805,603**	**293,528,740**

[1] Compensation is made to Quebec under the terms of the Established Programs (Interim Arrangements) Act. Payments in 1968-69 and 1969-70 amounted to $149,300,000 and $156,600,000, respectively.

Subsection 2.—Unemployment Assistance

The Unemployment Assistance Act, 1956—under which the Federal Government was authorized to reimburse a province or territory for 50 p.c. of the assistance expenditures made by that province and its municipalities to unemployed persons and their dependants—remains in effect in the Northwest Territories and, for a transition period, in some provinces to cover certain means-test programs during the process of conversion to needs-test pro-

grams. The federal share of such costs amounted to $16,700,000 during the year ended Mar. 31, 1969 and to $14,600,000 in the following fiscal year. This amount includes payment to Quebec under the Established Programs (Interim Arrangements) Act and to the Yukon Territory, whose agreement under the Canada Assistance Plan dates from Dec. 16, 1969 (see p. 383).

Subsection 3.—Old Age Assistance and Blind and Disabled Persons Allowances

Federal reimbursement to the provinces for assistance to blind persons and persons permanently and totally disabled, aged 18 or over, is provided for under the Blind Persons Act, 1951, as amended, and the Disabled Persons Act, 1954, as amended, and, until Jan. 1, 1970, for assistance to persons aged 65 or over under the Old Age Assistance Act, 1951, as amended. To be eligible for an allowance under any of these Acts, an applicant must meet the 10-year residence requirement and the income requirements. Under the Disabled Persons Act and the former Old Age Assistance Act, total income, including the allowance, may not exceed $1,260 a year for an unmarried person, $2,220 a year for a married couple or $2,580 a year for a married couple when the spouse is blind within the meaning of the Blind Persons Act. Under the Blind Persons Act, total income, including the allowance, may not exceed $1,500 a year for an unmarried person, $1,980 a year for a person with no spouse but with one or more dependent children, $2,580 for a married couple and $2,700 a year for a married couple when the spouse is also blind.

The federal contribution is 50 p.c. of $75 a month or the allowance paid, whichever is less, for old age assistance and disabled persons allowances, and 75 p.c. of $75 a month or the allowance paid, whichever is less, for blind persons allowances. The old age assistance program disappeared Jan. 1, 1970, when the eligible age for the old age security pension was lowered to 65 years.

Effective Apr. 1, 1965, Quebec received payment under the terms of the Established Programs (Interim Arrangements) Act.

9.—Statistics of Old Age Assistance and Blind and Disabled Persons Allowances, by Province, Year Ended Mar. 31, 1969 with Totals for 1966-69

Province or Territory	Old Age Assistance			Allowances for the Blind			Allowances for Disabled Persons		
	Recipients in Month of March	Average Monthly Assistance	Federal Contribution during Year	Recipients in Month of March	Average Monthly Allowance	Federal Contribution during Year	Recipients in Month of March	Average Monthly Allowance	Federal Contribution during Year
	No.	$	$	No.	$	$	No.	$	$
Newfoundland	—	—	189,183	401	73.30	277,298	82	63.04	461,943
Prince Edward Island	—	—	18,308	63	73.27	40,337	54	71.62	18,749
Nova Scotia	786	65.71	612,926	577	73.50	405,049	3,371	73.53	1,535,758
New Brunswick	822	69.36	682,834	491	73.99	345,044	2,292	74.37	1,022,271
Ontario	4	52.86	141,678	330	51.52	178,717	1,436	63.02	685,643
Manitoba	658	67.50	544,640	276	71.99	186,795	1,428	73.56	646,169
Saskatchewan	—	—	Cr. 19,416	99	65.85	67,091	170	68.71	80,794
Alberta	13	66.43	375,906	315	73.55	229,294	1,810	73.14	821,572
British Columbia	949	71.21	844,273	439	73.50	300,888	2,480	73.68	1,099,806
Yukon Territory	4	75.00	3,313	4	75.00	3,518	3	75.00	1,350
Northwest Territories	40	73.21	30,536	30	75.00	22,969	31	74.27	14,396
Canada[1] **1969**	**3,276**	**68.69**	**3,424,181**	**3,025**	**70.78**	**2,057,000**	**13,157**	**72.38**	**6,388,451**
1968	**12,083**	**66.91**	**8,950,507**	**3,384**	**70.82**	**2,314,248**	**15,789**	**72.26**	**7,063,958**
1967	**35,546**	**68.52**	**19,750,744**	**5,022**	**70.94**	**3,377,418**	**34,590**	**73.57**	**15,026,378**
1966	**52,988**	**68.85**	**26,980,510**	**5,437**	**71.05**	**3,632,212**	**34,588**	**73.51**	**14,979,430**

[1] Excludes Quebec. Effective Jan. 1, 1965 no payments were made to Quebec under these programs; instead, compensation was provided under the Established Programs (Interim Arrangements) Act. If payments had been made under these programs, however, total amounts for 1968-69 would have been increased as follows: old age assistance—$3,627,851; allowances for the blind—$1,523,632; and allowances for disabled persons—$7,952,096.

Under the terms of the Canada Assistance Plan, a province may elect to aid needy persons in these categories under a general assistance program with costs shared under the plan (see p. 384). In accordance with this provision certain provinces no longer accept applications under these programs. By mid-1970, Newfoundland, Prince Edward Island, Nova Scotia, Ontario, Saskatchewan and Alberta had discontinued receipt of applications for disabled persons allowances, and three of these—Ontario, Saskatchewan and Alberta—had also discontinued receipt of applications for blind persons allowances.

Subsection 4.—Fitness and Amateur Sport Program

The Fitness and Amateur Sport Program was inaugurated in 1961 to increase the number of participants at all levels of competitive and non-competitive physical recreation and amateur sport activity ranging from day camps to the Canada Games and the Olympic Games; to help provide the participants with the skills, the means and the opportunity to benefit from recreation; and to help make available to all citizens the facilities and leadership to participate freely in recreational activities of their choice. These objectives are predicated on the assumption that every Canadian should develop a level of fitness sufficient to contribute positively to his physical and mental health and that Canadian athletes should develop a level of performance in national and international competitions which will contribute to national unity and international prestige.

Under the Fitness and Amateur Sport Act, 1961, up to $5,000,000 a year may be expended to encourage, promote and develop fitness and amateur sport in Canada. A National Advisory Council on Fitness and Amateur Sport, consisting of not more than 30 members appointed by the Governor in Council with at least one from each province, has been set up to consider problems connected with such activity and to advise the Minister of National Health and Welfare thereon.

After consideration of the report of the Task Force on Sports for Canadians, the findings of the Montmorency Conference on Leisure, the recommendations made by the National Advisory Council on Fitness and Amateur Sport, and the conclusions of an internal departmental study, the Minister proposed, in March 1970, a new government sports policy for Canadians. Advocating the benefits of mass participation and the inculcation of sports and recreation into the Canadian culture, the policy aims primarily at reinforcing and increasing the administrative strength of Canadian sports and recreation agencies by providing them with administrative, financial and other professional assistance. The Department operates certain projects of its own and also provides grants for specific projects, all intended to facilitate the development of resources and motivate participation by all Canadians.

The federal program for 1970-71 concentrates on (1) grants and support to national fitness and sport organizations to improve the standards of administration, coaching and instruction, to increase the rate of participation in physical recreation and to provide aid to the holding of competitions ($2,000,000); (2) promotion and support of special projects including the Arctic Games, the Canada Games and the Canada Fitness Awards, and assistance in the holding of sports events of nation-wide interest ($1,400,000); (3) planning, training, research and communications in support of increased participation in physical recreation by all Canadians; and (4) grants to provinces ($500,000)—the cost-sharing agreements with the provinces for fitness and amateur sports programs terminated on Mar. 31, 1970 but this $500,000 has been allocated to provide for a phase-out period during which new programs will be developed on a joint-project basis.

Subsection 5.—National Welfare Grant Program

The National Welfare Grant Program was established in 1962 to help develop and strengthen welfare services in Canada through a general welfare and professional training grant and a welfare research grant. The variety of provisions within the program, along

with its associated consultative services, allow it to operate as a flexible instrument in the development of welfare services and to give a major emphasis to experimental activities in the welfare field.

The allotment for the year ended Mar. 31, 1970 was $2,500,000. Provincial governments, municipal welfare departments, non-governmental welfare agencies and citizens' groups, universities and individuals may be the ultimate recipients of project grants under one or more provisions of the program. Most are financed and administered entirely by the Federal Government; others require application through a provincial department of welfare that actually administers the award on a shared-cost basis.

General welfare, bursary, training and staff development grants are available to provinces on a shared-cost basis for projects designed to improve welfare administration, to develop provincial consultative and co-ordinating services, and to strengthen and extend public and voluntary welfare services; for bursaries for full-time graduate training at Canadian schools of social work; and for staff training and development grants for employees of government and voluntary welfare agencies where the costs are not shareable under the Canada Assistance Plan.

The other provisions of the program are administered by the Federal Government. Welfare scholarships are awarded for graduate study in Canadian schools of social work and fellowships for advanced study at Canadian and foreign universities. Teaching and field-instruction grants assist with the development of new Canadian schools of social work and with certain operating costs at existing schools.

Under the welfare research grant, funds are provided for a variety of research projects undertaken by public and voluntary welfare and correctional agencies, universities and research institutions. Grants are available to national voluntary welfare agencies to assist with projects not eligible for support under other provisions of the program. Particular emphasis is given to projects designed to foster planning and co-ordination.

Effective Apr. 1, 1967, a mental retardation grant was established for a five-year period and is being administered in conjunction with the National Welfare Grant Program. It supports research and demonstration projects designed to expand knowledge and to apply that knowledge to the provision of services and to preventive programs in that field.

Expenditures under the National Welfare Grant Program for the year ended Mar. 31, 1970 totalled $1,924,541 and under the Mental Retardation Grant, $288,171. Of the former, $334,671 was expended on research projects; $636,071 on teaching and field instruction, welfare scholarships and fellowships; $215,815 on national agency projects; and $737,984 on welfare demonstration and general welfare projects, including provincially administered bursary and staff development programs.

Subsection 6.—Vocational Rehabilitation

The federal-provincial vocational rehabilitation program, which began in 1952, was consolidated and extended under the Vocational Rehabilitation of Disabled Persons Act, 1961. Agreements under this Act provide for equal sharing of costs between the Federal Government and the provinces. These costs include co-ordination and provision of services to disabled or other vocationally disadvantaged individuals, training of rehabilitation personnel, and research and publicity. Approved services supplied by a provincial government or purchased from voluntary agencies by a provincial government include medical, social and vocational assessment, intensive counselling, restorative services, the provision of prostheses, vocational or educational upgrading, rehabilitation allowances, work conditioning, and provision of tools, books and other equipment. Employment counselling and placement are provided through the Canada Manpower Centres of the Department of Manpower and Immigration or by the voluntary agencies from which services are purchased.

In each participating province, a provincial co-ordinator or director of rehabilitation is responsible for the co-ordination and administration of services to disabled or vocationally

disadvantaged persons. The federal aspects of the program are administered by the Manpower Utilization Branch of the Department of Manpower and Immigration in co-operation with the Department's five regional offices. The Manpower Utilization Branch, through its section on Older Workers, also has the function of encouraging a more favourable employment climate for older workers through a continuing educational program, encouragement of research, maintenance of liaison with management, labour and voluntary agencies, assembly and dissemination of informational material concerning industrial gerontology, and supportive services to the Canada Manpower Centres. Among other agencies contributing to vocational rehabilitation are the Workmen's Compensation Boards in all provinces, which provide for the rehabilitation of injured workmen.

In the year ended Mar. 31, 1969, federal expenditures under the vocational rehabilitation program totalled $3,680,000. Reports received on 3,066 disabled or vocationally disadvantaged persons rehabilitated during the year indicated that, at the end of the year, 2,224 of them were rehabilitated to employment and 842 were seeking employment or were rehabilitated to self-care at home. Before rehabilitation, the cost of support of the 2,224 who obtained employment and of their dependants was estimated at $2,000,000 annually; following rehabilitation, their aggregate earnings were estimated at almost $8,800,000.

Section 3.—Provincial Welfare Programs

Major welfare programs governed by provincial legislation include social assistance, services for the aged and child welfare services. Also, the Province of Quebec operates the Quebec Pension Plan, which is comparable to the Canada Pension Plan (see p. 374), and a family allowance program (see p. 381). Provincial departments of public welfare are responsible for the administration of welfare programs, although administration of certain of them may be shared with their municipalities.

Public services are supplemented by those of voluntary agencies whose interests include the welfare of families and children and of groups with special needs, such as the aged, recent immigrants, youth groups, and released prisoners. Welfare councils and social planning councils contribute to the planning and co-ordinating of local welfare services. Local voluntary agencies and institutions may receive public grants, depending on the nature and standard of their services, although their main support is usually from United Appeal funds or from sponsoring organizations.

Subsection 1.—Social Assistance

All provinces make legislative provision for assistance to persons in need and their dependants. All provinces have incorporated provisions for allowances to needy mothers with dependent children in a broadened program of provincial allowances to several categories of persons with long-term need or in a general program under which the only eligibility requirement is need, irrespective of the cause of need.

In addition to allowances to cover items of basic need, such as food, clothing, shelter, fuel and utilities, all provinces make provision for such special items as rehabilitation services, expenses incidental to education or obtaining employment, counselling, homemaker services and institutional care. The provinces are reimbursed by the Federal Government under the Canada Assistance Plan for 50 p.c. of the costs of assistance and of certain welfare services given by the provincial and municipal authorities (see p. 384). The provincial departments of welfare set rates of assistance and conditions of eligibility; they have regulatory and supervisory powers over municipal administration of assistance, and require certain standards as a condition of provincial aid. Length of residence is not a condition of aid in any province, but municipal residence may determine the financially responsible authority. The provincial authority takes responsibility for aid in unorganized areas within the province and for persons who lack municipal residence.

The administration of assistance varies. In five provinces allowances to persons with long-term need, such as needy mothers with dependent children, disabled persons and the aged, are administered by the province and other allowances are administered by the municipalities. In Newfoundland and New Brunswick, all assistance is administered by the provincial authority. In Prince Edward Island, assistance is administered by the province and two of the larger municipalities. In Saskatchewan, social assistance is administered by the province except in two municipalities which elected to retain responsibility for administration of the program. In British Columbia, a comprehensive program of general assistance is administered by the local authority, i.e., by the municipalities except in sparsely populated municipalities and in areas without municipal organization where aid is administered by the province; the province also administers a program of supplementary allowances to needy recipients of old age security pensions and the two federal-provincial categorical allowances. In the eight provinces where the municipalities have some administrative responsibility, the proportion of the costs of aid borne by the province varies from 40 p.c. to 100 p.c.

Subsection 2.—Living Accommodation for Elderly Persons

In all provinces, homes for the aged and infirm are provided under provincial, municipal or voluntary auspices. These homes are required to meet standards set out in provincial legislation relating to homes for the aged, welfare institutions or public health. Voluntary homes are usually provincially inspected and in some provinces must be licensed.

All provinces in varying degrees make capital grants toward the construction or renovation of homes for the aged by municipalities or voluntary organizations and, generally speaking, such homes are exempt from municipal taxation. Some provinces also make provision for capital grants to municipalities, charitable organizations or non-profit corporations for the construction of low-rental housing for elderly persons. These projects are usually built under Sect. 16 of the National Housing Act, which provides for long-term low-interest loans to non-profit corporations constructing low-rental self-contained or hostel accommodation for older people. Units for the aged may also be included in low-rental public housing projects for families, built under Sect. 35 of the Act.

In some provinces efforts are made to place well, elderly people in small proprietary boarding homes. Those who are chronically ill may be cared for in chronic or convalescent hospitals, private or public nursing homes and some homes for the aged. All provinces contribute to the maintenance of needy persons in homes for the aged or other homes for special care, and these costs are shared by the Federal Government under the Canada Assistance Plan (see pp. 383-384).

Subsection 3.—Child Welfare Services

Child welfare services, which include child protection and care, services for unmarried parents and adoption services, are provided in all provinces under provincial legislation. The programs are administered by the provincial authority or by local children's aid societies (voluntary agencies with boards of directors, operating under charter and under the general supervision of provincial departments). In Newfoundland, Prince Edward Island, New Brunswick, Saskatchewan and Alberta, child welfare services are administered by the province; in Quebec, they are administered by recognized voluntary agencies and institutions, religious and secular; in Ontario, a network of local children's aid societies is responsible for the services; in Nova Scotia, Manitoba and British Columbia, services are administered by local children's aid societies in the heavily populated areas and by the province elsewhere.

Children's aid societies and the recognized agencies in Quebec receive substantial provincial grants and sometimes municipal grants and in many areas they also receive support from private subscriptions or from United Appeal funds. The costs of certain

services and maintenance costs for children in care of a voluntary or public agency are shareable with the Federal Government under the Canada Assistance Plan (pp. 383-384).

Child welfare agencies, provincial or voluntary, have the authority to investigate cases of alleged neglect and, if necessary, to apprehend a child and to bring the case before a judge upon whom rests the responsibility of deciding whether in fact the child is neglected. When neglect is proved, the court may direct that the child be returned to his parent or parents under supervision, or be made a ward of the province or a children's aid society. Services are provided as appropriate and include services to children in their own homes, care in foster boarding homes or adoption homes or, for children who need it, in selected institutions. Children placed for adoption may be wards or they may be placed on the written consent of the parent. Adoptions, including those arranged privately, number about 18,000 annually.

Child welfare agencies make use of the small selective institution for placement of children who are forced to be away from their own homes for a short period or who may need preparation for placement in foster homes, and emphasis is increasingly being placed on group-living homes. The development of small, highly specialized institutions, which function as treatment centres for emotionally disturbed children, is of particular significance. Institutions for children are governed by provincial child welfare legislation and by provincial or municipal public health regulations; they are generally subject to inspection and in some provinces to licensing.

Services to unmarried parents include casework services to the mother and possibly to the father, legal assistance in obtaining support for the child from the father, and foster-home care or adoption services for the child. Support for unmarried mothers may be obtained under general assistance programs. In many centres, homes for unmarried mothers are operated under private or religious auspices.

Day nurseries for the children of working mothers are established only in the larger centres. These are chiefly under voluntary auspices, except in Ontario, where there are also municipally sponsored day nurseries operated with the aid of provincial grants.

Subsection 4.—Newfoundland's Schooling Allowances Program

The Province of Newfoundland introduced its Parents' Supplement (Schooling Allowance) program in 1966. Under this scheme, an annual benefit of $15 is paid in semi-annual instalments for each eligible child who is registered at and attending a school other than a trade school or university. There is no age limit specified in the legislation but the allowance terminates when the child leaves school.

Subsection 5.—Quebec's Family Allowances Program

The Province of Quebec introduced its own family allowances program under legislation enacted in 1967. Under this plan, the following allowances are paid at the end of each six-month period to persons satisfying the relationship and residence requirements in respect of children under 16 years of age: $15 for one child, $32.50 for two children, $52.50 for three children, $77.50 for four, $107.50 for five, $142.50 for six, and an extra $35 for each child after the sixth. These allowances are increased by $5 for each child between the ages of 12 and 16 years. To qualify for the allowances, children must be attending school regularly from the time when they are first required to do so, unless prevented by physical or mental infirmity. These allowances supplement those paid under the federal scheme.

Section 4.—Emergency Welfare Services

The function of the Emergency Welfare Services Division of the Department of National Health and Welfare is to develop community capability to provide, in the event of a national emergency, essential welfare services not available through established welfare

agencies. A 1959 Order in Council set up five emergency welfare services—emergency clothing, emergency feeding, emergency lodging, registration and inquiry, and personal services—and gave the Division responsibility for the continuation of welfare departments in support of rehabilitation and recovery. To these ends, policy has been defined, systems designed and, at all levels of government, welfare resources planned.

In peacetime, trained specialists within the federal, provincial and municipal departments of welfare, organized nationally, are responsible for developing an emergency welfare capability. The program is an integral part of the Canada Survival Plan and is co-ordinated with the programs of other Canadian Government agencies and with mutual support programs of the United States Department of Health, Education and Welfare. Leaders are being trained in the art of organizing large numbers of volunteers for emergency welfare operations and a public education program is being maintained. Special printed forms and equipment for survival, not regularly available through commercial sources, have been produced and are located strategically across Canada.

Section 5.—International Welfare and Social Security*

Canada is actively involved in the social welfare and social development activities of the United Nations and its specialized agencies and of various international voluntary organizations. At the United Nations, Canada is represented on the Commission for Social Development, is a member of the Executive Board of the United Nations Children's Fund and participates actively in the International Council on Social Welfare, the International Social Security Association and other international agencies concerned with the social aspects of development.

Under the program of the Canadian International Development Agency, Canada supports a number of social welfare projects in developing regions and provides social work and social welfare training for foreign students recommended by their governments. The necessary technical services to the bilateral and multilateral aid programs in this sector are supplied by the Department of National Health and Welfare, which works closely with several Canadian voluntary organizations engaged in social development.

Canada is in the course of negotiating reciprocal agreements on social security with other countries, commencing with West Germany. Canadian agencies employed in social security participate in the program of the International Social Security Association and the social security program of the International Labour Organization. For some years, Canada has been represented, as an observer, at the meetings of the Inter-American Social Security Association.

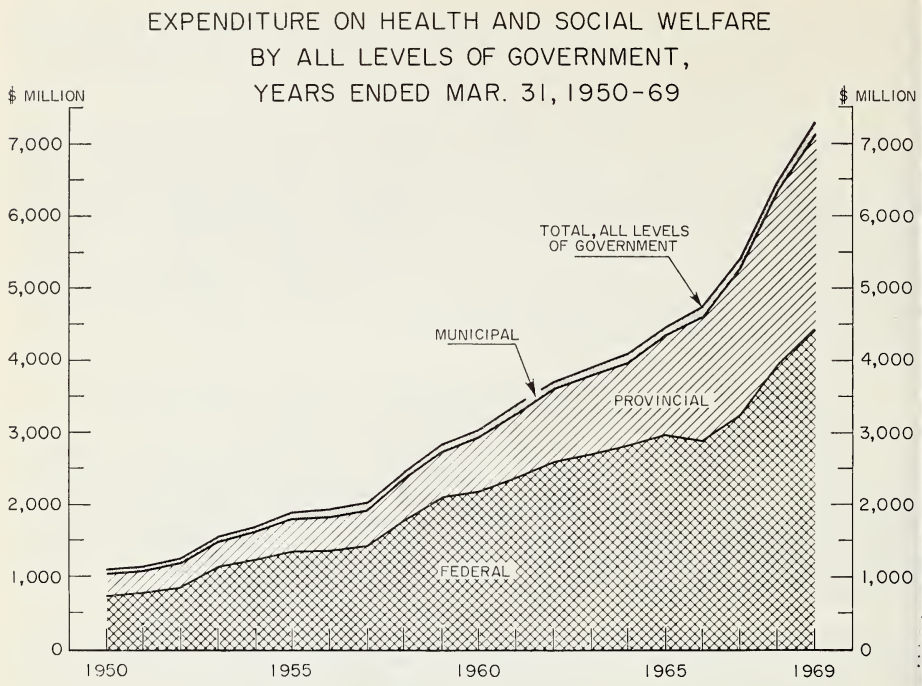
PART III.—HEALTH AND SOCIAL WELFARE EXPENDITURES

Section 1.—Government Expenditures on Health and Social Welfare

In the years ended Mar. 31, 1962-69, expenditures by all levels of government on health and social welfare rose from $3,689,200,000 to an estimated high of $7,270,000,000, an almost twofold increase. If these figures are adjusted to take account of growth in population, the increase in per capita expenditures—from $201 to $350—was about 75 p.c. Government expenditures may also be measured in relation to major economic indicators; on this basis, annual government expenditures on health and social welfare over the period remained relatively stable, fluctuating between 12.4 p.c. and 13.1 p.c. of net national income and between 9.2 p.c. and 9.9 p.c. of gross national product.

The federal share of health and social welfare expenditures fell from 69.9 p.c. in 1961-62 to 60.7 p.c. in 1968-69, the provincial share rose from 27.2 p.c. to 37.1 p.c. and municipal

* See also pp. 187-189.



outlays declined from 2.9 p.c. to 2.2 p.c. Compared with 1967-68, health and social welfare expenditures by all levels of government increased by $820,000,000 or nearly 13 p.c. This may be compared to the rise of $1,066,200,000 or 20 p.c. in 1967-68 over 1966-67. Expenditures in both the federal and provincial fields increased by the same proportion—approximately 12.7 p.c. The main items causing this rise included: higher disbursements under the old age security and guaranteed income supplement programs principally because of the lowering of the eligible age and increase in the monthly benefits paid; greater expenditures incurred by the introduction of the Canada Assistance Plan which is wider in scope than the categorical programs it is intended to replace; higher expenditures under the Unemployment Insurance Act; greater outlays on behalf of health and welfare for the Indian and Eskimo populations; increasing expenditures under the Hospital Insurance and Diagnostic Services Act; and contributions to the provinces under the Health and Hospital Construction Grants and the new Health Resources Fund Act.

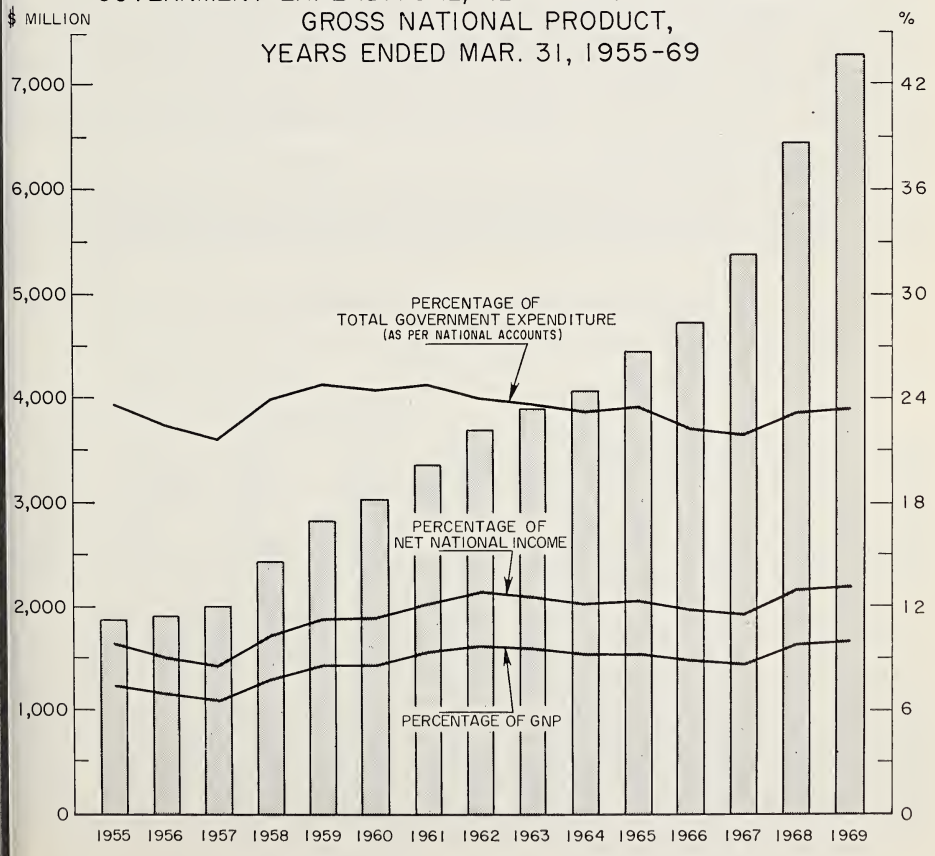
The relative federal declines, compared to provincial gains in recent years, have been caused to a substantial degree by increasing hospital expenditures by the provincial government augmented by the effect of the "opting-out" arrangements made available to the provinces. Under the Established Programs (Interim Arrangements) Act, a province may choose to receive contributions from the Federal Government in the form of a tax abatement and an equalization payment in lieu of a direct federal contribution under the program. The opting-out arrangements have the effect, in this presentation, of showing an increase in provincial government expenditures while the federal fiscal payment is treated not as an expenditure but as a transfer payment. Thus, provincial expenditures include gross outlays by Quebec whereas federal expenditures on health and social welfare do not include the large sums paid or transferred to that province under the Established Programs (Interim Arrangements) Act and other fiscal arrangements. The share of the Federal

Government in total health and social welfare expenditures by all levels of government showed a steady decline from year to year up to 1967-68, but in 1968-69 this trend was reversed.

The proportion of government expenditures on health and social welfare taken up by health programs continues to grow; in 1961-62 such programs accounted for $1,126,000,000 or 30 p.c. of the total and in 1968-69 they amounted to $2,779,000,000 or 38 p.c.

An outline of the principal federal income maintenance programs for 1968-69 shows the magnitude of the major programs and services—family allowances payments amounted to $560,000,000, old age security payments to $1,297,000,000 plus another $244,000,000 under the guaranteed income supplement program, unemployment insurance benefits to $459,000,000 and veterans pensions and allowances to $223,000,000 and $102,000,000, respectively. In addition, payments under the youth allowances program, which commenced in September 1964, amounted to $52,000,000 excluding the Province of Quebec. That province had instituted a program of schooling allowances three years prior to the

EXPENDITURE ON HEALTH AND SOCIAL WELFARE BY ALL LEVELS OF GOVERNMENT WITH PERCENTAGES OF TOTAL GOVERNMENT EXPENDITURE, NET NATIONAL INCOME AND GROSS NATIONAL PRODUCT, YEARS ENDED MAR. 31, 1955-69



introduction of the federal program and this necessitated a special arrangement whereby Quebec continued its program but with appropriate fiscal reimbursement from the Federal Government. In 1967-68, Quebec inaugurated its own family allowances program supplementing the federal scheme (see p. 390).

Federal-provincial income-maintenance programs in 1968-69 required expenditures of $3,400,000 for old age assistance, $2,100,000 for blindness allowances, $6,400,000 for disabled persons allowances and $1,000,000 for unemployment assistance, the latter including some municipal expenditures. The smallness of these amounts indicates the effectiveness of the Canada Assistance Plan, for which this was the third year of operation and which was intended to replace all activities under those programs at the option of each province (see pp. 383-384). In 1965 Quebec withdrew from these federal-provincial programs under the Established Programs (Interim Arrangements) Act, which entitled that province to a tax abatement and an equalization payment. Canada Assistance Plan expenditures in 1968-69 were $257,000,000. Provincial Workmen's Compensation Boards spent $177,000,000 on cash benefits for pensions and compensation. Welfare services for Indians and for veterans and the national employment services accounted for $104,000,000 at the federal level.

In the field of health, federal grants to the provinces under the Hospital Insurance and Diagnostic Services Act totalled $562,000,000 and grants for hospital construction and general health grants to the provinces and municipalities amounted to $44,000,000. The Federal Government spent $44,000,000 on its Indian and northern health services and $72,000,000 on hospital and treatment services for veterans. Provincial expenditures on hospital care were estimated at $1,415,000,000 and expenditures on other health services at $350,000,000. In addition, provincial Workmen's Compensation Boards paid $62,000,000 for medical aid and hospitalization, and municipal governments spent an estimated $89,000,000 on health.

1.—Total, Per Capita and Percentage Distribution of Government Expenditures on Health and Social Welfare, by Level of Government, Years Ended Mar. 31, 1962-69

Year Ended Mar. 31—	Federal	Provincial	Municipal	Total
	Total Expenditures			
	$ 000,000	$ 000,000	$ 000,000	$ 000,000
1962	2,577.1	1,004.3	107.8	3,689.2
1963	2,683.5	1,097.7	117.3	3,898.5
1964	2,801.0	1,166.8	101.2	4,069.1
1965	2,969.7	1,376.1	108.2	4,454.0
1966	2,883.5	1,714.3	129.6	4,727.4
1967	3,243.1	2,013.8	127.0	5,383.8
1968[1]	3,915.5	2,396.1	138.5	6,450.0
1969[1]	4,413.5	2,698.5	158.0	7,270.0
	Per Capita Expenditures[r]			
	$	$	$	$
1962	140.34	54.69	5.87	200.90
1963	143.44	58.68	6.27	208.39
1964	146.95	61.22	5.31	213.48
1965	152.92	70.86	5.57	229.35
1966	145.80	86.68	6.56	239.04
1967	160.88	99.90	6.30	267.08
1968[1]	190.55	116.61	6.74	313.90
1969[1]	212.76	130.08	7.62	350.46

[1] Includes or based on estimated data.

1.—Total, Per Capita and Percentage Distribution of Government Expenditures on Health and Social Welfare, by Level of Government, Years Ended Mar. 31, 1962-69—concluded

Year Ended Mar. 31—	Federal	Provincial	Municipal	Total
	Percentage Distribution			
1962	69.9	27.2	2.9	100.0
1963	68.8	28.2	3.0	100.0
1964	68.8	28.7	2.5	100.0
1965	66.7	30.9	2.4	100.0
1966	61.0	36.3	2.7	100.0
1967	60.2	37.4	2.4	100.0
1968[1]	60.7	37.2	2.1	100.0
1969[1]	60.7	37.1	2.2	100.0

[1] Includes or based on estimated data.

Section 2.—Expenditures on Personal Health Care

Expenditures on personal health care comprise expenditures of hospitals, earnings of physicians and dentists for professional services to their patients, and the value of prescription sales through retail pharmacies. They exclude the amount that private nurses, chiropractors, osteopaths and optometrists receive for their professional services as well as expenditures on public health, capital costs (buildings and interest) and administration costs of public health programs and of insurance plans.

Table 2 shows the components for each year from 1957 to 1969. Canadians spent a total of $3,924,700,000 on personal health care in 1969, almost three times as much as in 1957. Expressed as a proportion of the gross national product, personal health care expenditures rose from 3.2 p.c. in 1957 to 5.0 p.c. in 1969. Expenditure per person over the same period changed from $62.81 to $186.10.

2.—Expenditures on Personal Health Care, 1957-69

Note.—Figures from 1957 to 1966 have been revised since the publication of the 1969 Year Book.

(Millions of dollars)

Year	Hospital Services					Physicians' Services	Dentists' Services	Prescribed Drugs	Total
	General and Allied Special	Mental	Tuberculosis	Government of Canada[1]	All Hospitals				
1957	422.9	87.5	31.7	45.3	587.4	271.8	85.0	103.2	1,047.4
1958	462.3	99.0	30.9	48.4	640.7	301.3	90.6	112.4	1,144.9
1959	543.8	111.6	30.0	50.3	735.6	325.7	99.0	130.2	1,290.5
1960	640.6	121.8	31.3	53.9	847.6	355.0	109.6	131.1	1,443.3
1961	722.1	134.9	28.2	63.9	949.0	388.3	116.7	133.6	1,587.6
1962	811.8	144.4	27.6	70.3	1,054.2	406.1	121.5	141.0	1,722.8
1963	909.8	163.0	28.3	73.8	1,174.9	453.4	136.9	156.6	1,921.9
1964	1,015.1	182.1	26.2	76.8	1,300.2	495.7	147.8	170.9	2,114.7
1965	1,144.5	211.6	26.0	79.8	1,461.9	545.1	160.1	200.0	2,367.1
1966	1,319.0	241.8	25.9	82.1	1,668.8	605.2	176.4	214.6	2,665.0
1967	1,523.0	283.9	26.0	83.3	1,916.3	686.2	187.2	239.5	3,029.1
1968[2]	1,779.2	319.8	27.0	90.4	2,216.4	788.1	213.7	258.2	3,476.5
1969[2]	2,036.8	350.9	29.1	96.3	2,513.1	910.0	231.5	270.1	3,924.7

[1] Excludes Department of National Defence hospitals for 1957-60.

[2] Preliminary estimates, except data for "Physicians' Services" for 1968, which are final.

PART IV.—NATIONAL VOLUNTARY HEALTH AND WELFARE ACTIVITIES

A number of national voluntary agencies carry on important work in the provision of health and welfare services, medical research, and education. These agencies, some of which are described below, complement the services of the federal and provincial authorities in many fields, and play leading roles in stimulating public awareness of health and welfare needs and in promoting action to meet them.

The Canadian Arthritis and Rheumatism Society.—This agency, organized in 1948, with head office in Toronto, provides research, treatment and education in rheumatic diseases. It has assisted many general hospitals to establish arthritis clinics and during the past decade has supported the development of nine rheumatic disease in-patient units in teaching hospitals in five provinces. Organized under eight provincial divisions and local branches in most towns, this organization attempts to meet special needs of arthritic patients not covered by hospital or medical insurance plans. It provides home physiotherapy in larger cities and mobile consultation services to patients and doctors in rural areas. An Arthritis Centre opened by the Society in Vancouver in 1969 provides a comprehensive program of services to ambulant patients, employing up-to-date evaluative techniques in occupational therapy and physiotherapy, combined clinical assessment of patients by surgeons, physicians and other members of the treatment team and also serving as an education unit for health service personnel.

Of a budget of $2,350,000 in 1968, the Society directed one quarter to research and the support of rheumatic disease units, and 55 p.c. to the provision of treatment services. Public donations are the chief source of funds, including independent campaigns and United Appeals.

The Canadian Association for the Mentally Retarded.—This Association was incorporated in 1958 to co-ordinate the work of organizations serving the mentally retarded, who are estimated to number about 630,000 or 3 p.c. of the population. The Association is represented by ten provincial and more than 300 local groups. It offers special classes and sheltered workshops for trainable retarded children and adults, assessment clinics, activity centres, summer camps and other recreational programs. Its affiliate, the National Institute for Mental Retardation, is a clearinghouse for information on mental retardation and, in co-operation with other organizations and with governments, is developing a nation-wide research and demonstration program. A widely publicized event in the 1969 program was the Canadian Special Olympics for the Mentally Retarded held in Toronto.

Financial support comes from local fund-raising campaigns, United Appeals, the sale of special Christmas cards and, in varying degree, from provincial and municipal governments, including departments of education. The national office is in Toronto.

The Canadian Cancer Society.—This agency, with the active encouragement of the Canadian Medical Association, was organized as a cancer study unit and incorporated in 1938, operating in all provinces from its national office in Toronto. It offers public education and services not otherwise available for cancer patients, principally transportation, home nursing, boarding and nursing home care, sickroom supplies and dressings. Research into the causes and treatment of cancer in 1970 accounted for $4,062,629, or over 50 p.c. of the expenditure of the Society. The Society is the principal fund-raiser for its affiliate, the National Cancer Institute of Canada, providing more than 90 p.c. of the Institute's 1969 budget of over $4,000,000. The Canadian Cancer Society sponsors fellowships in cancer research for advanced students and provides capital funds for research facilities.

The Canadian Cystic Fibrosis Foundation.—This national agency, organized in 1960 with head office in Toronto, operates in most provinces and has 30 affiliated local chapters. Because cystic fibrosis is believed present in one of every 1,000 babies born in

North America, the Foundation seeks to promote special services for patients as well as research, professional training and public understanding concerning cystic fibrosis. A valuable source of publicity and research funds has been the annual "Shinerama" in which 40 Canadian colleges and universities participated in 1969, raising $120,102. The agency supports the International Association which is composed of 22 member nations.

The Canadian Diabetic Association.—The Association, formed in 1953 with headquarters in Toronto, has 38 branches in nine provinces and a French-language affiliate, l'Association du Diabète, in Quebec. It is affiliated with the Canadian Medical Association and the Canadian Dietetic Association. Its aims are to co-ordinate the efforts of individuals and organized bodies with a view to reducing the morbidity and mortality rates from diabetes and to provide an authoritative and advisory organization for the benefit and service of diabetics.

The Association estimates that 2.5 p.c. of the population is diabetic but that more than half of the diabetics are unaware of their illness. The Association seeks through its public information programs to help diabetics identify their illness at an early stage. One method in current use is a multi-screening technique that simultaneously tests for the presence of diabetes, tuberculosis, anaemia and glaucoma. The Association also provides diet counselling, summer camps for children, aid to diabetic senior citizens, education and information services, and diabetic treatment centres. Research into the nature and treatment of diabetes includes the Family Tree Research Program. The Association publishes a quarterly bulletin, the *Canadian Diabetic Association Newsletter.*

The Canadian Hearing Society.—Organized in 1940 as the National Society of the Deaf and the Hard of Hearing, the Society has offices in Toronto, Ottawa, London, Hamilton and Montreal. It is concerned with the preservation of hearing, the treatment of deafness, and the rehabilitation of those with impaired hearing, including war veterans and children. It provides hearing examinations, counselling, vocational guidance and job placement services for the deaf or hard-of-hearing, and hearing aids to persons in need, and works closely with schools for the deaf. The Society publishes *The Canadian Hearing Review* and other educational material available for the public.

Canadian Heart Foundation.—The Canadian Heart Foundation with headquarters in Ottawa was formed by physicians in 1956 "to co-ordinate and correlate the efforts of organizations and individuals interested in heart diseases with a view to reducing the morbidity and mortality therefrom in Canada". It has developed into a federation of six affiliated provincial heart foundations together with four provincial divisions of the Canada Foundation in the Atlantic Provinces. Their programs are concerned primarily with the support of cardiovascular research in Canadian universities and hospitals and they also support travelling lectureships by scientists and educational programs for the health professions and the general public. Over 70 p.c. of the resources of the Foundation are disbursed in the form of research fellowships and grants-in-aid which amounted to $15,000,000 in the past ten years and to over $2,500,000 in 1969-70. The major source of funds is the annual Canadian Heart Fund campaign.

Canadian Medic-Alert Foundation.—This international foundation had its beginnings in California in 1956; the Canadian affiliate was organized in 1961, with head office in Toronto. Its main purpose is to educate and encourage the public to wear Medic-Alert identification discs stipulating medical problems that should be known of in an emergency. The Foundation estimates that one person in each family has a medical problem that should be identified, such as sensitivity to certain drugs, a heart condition, diabetes, epilepsy, or an uncommon blood type. A recently added feature is the identification of the bearer as a possible transplant-donor. The wearing of the disc enables such a person to receive correct treatment if, for example, he should be unconscious when he reaches hospital. The medical history of each disc-wearer is filed in Toronto and in Tuloch, California; discs

carry emergency telephone numbers through which this information can be obtained a any hour. Canadian membership is currently estimated at 40,000. The Foundation i financed by lifetime membership fees ($7) and by donations.

The Canadian Mental Health Association.—The national body of this Association established in 1918 and legally incorporated in 1927, has its head office in Toronto, division in all provinces, and nearly 200 local branches and committees. The national office i financed by United Appeals, government grants, support from provincial divisions, an donations. The Association's objectives are to improve public understanding of an attitudes toward mental illness and the mentally ill, and to improve existing preventiv and treatment services. It is estimated that one in every eight Canadians will be treate for psychiatric illness during his lifetime.

The Association performs research and technical studies related to mental illnes undertakes social and community action to improve legislation and governmental pro grams, conducts industrial rehabilitation workshops, provides volunteer services t patients both during and after their stay in hospital, and provides public and professiona education about mental health and mental illness. Among special services provided b volunteers are the 42 White Cross Centres, social clubs to assist former patients who hav difficulty coping with a feeling of social isolation. Four summer camps are operated fo patients. The Association administers the C. M. Hincks Research Fund which enable general practitioners to take a month of special training in psychiatry. Publication resulting from research studies sponsored by the Association include *More for the Mint The Law and Mental Disorder, Mental Health and Public Health,* and *University Studen Unrest.*

The Canadian National Institute for the Blind.—This agency was incorporate in 1918 "to carry out all operations which shall be deemed advantageous throughou Canada for the welfare of the blind" and "to take measures and adopt every possible mean for the conservation of sight". To this end, services are provided through a national offic in Toronto, eight divisions covering all provinces, and 50 sub-district offices. Unite Appeals and private donations are the major sources of income.

In 1969, services were provided to 21,291 of the 27,184 blind persons registered wit the Institute, including educational and vocational assistance, home teaching and employ ment, eye services, mobility training, recreation, special services to children and youths and social services. Services provided to 8,175 other persons registered as "prevention' cases included eye examinations, medical treatment, glasses or artificial eyes, transportatio and maintenance. Services are given free.

The Institute supports the operation of the Arthur V. Weir Training and Vocationa Guidance Centre for advanced professional and technical training in Toronto and Lo Vision Aid Clinics and Eye Banks in major cities. It does not directly conduct researc programs but supports research through the E. A. Baker Foundation and provides funds fo grants, bursaries and fellowships (some $43,000 in 1968) to be used for training of profes sionals in blindness prevention. The National Library of the Institute is continuall expanding its disc and tape talking-book stock.

The Canadian Paraplegic Association.—The Association was formed in 1945 by a group of paraplegic veterans of World War II to assist with the re-establishment of para plegics in the community. Through its head office in Toronto and seven divisions servin other areas in Canada, the Association provides treatment and rehabilitation facilities including prostheses and personal aids, for persons suffering paralysis and carries ou educational and research activities in related areas. In Toronto, a comprehensive treat ment service is available at Lyndhurst Lodge Hospital and elsewhere service is arrange with other hospitals and rehabilitation agencies.

The divisional offices have led local campaigns to remove architectural barriers tha hamper the physically handicapped in using community services and facilities and reduc

their opportunity for vocational rehabilitation and employment. To overcome these difficulties, the National Research Council published *Building Standards for the Handicapped, 1965*, a supplement to the National Building Code. It is estimated that one in seven Canadians will have to cope with this problem at some period, as a result of physical handicap, temporary disability or age. A stylized wheelchair symbol was adopted at the 1969 World Congress of the International Society for the Disabled to designate buildings that are accessible to the handicapped.

The Canadian Paraplegic Association is supported primarily by public donations but also by grants from United Appeal funds and federal, provincial and municipal governments, and by fees from patients. The agency publishes a regular information bulletin, *Caliper*.

The Canadian Red Cross Society.—The Canadian Red Cross Society, established in 1896, is the largest voluntary organization operating in the fields of health and welfare. In line with its objectives, "in time of peace or war, to carry on and assist in work for the improvement of health, the prevention of disease and the mitigation of suffering throughout the world", the Society operates 22 programs including a national blood-transfusion service, hospital and nursing stations in isolated areas (34 in 1968), home nursing, homemaker and sick-room supply services, and the Red Cross youth programs which seek to promote understanding of and assistance to needy children everywhere.

The Red Cross blood-transfusion service held over 6,500 clinics in 1968. In addition, the Society is a member of the international rare-blood donor service; of the 340 donors called upon for donations by that service in 1968, 139 were Canadians. Welfare recipients were given instruction in nutrition, purchasing and basic sewing in addition to home nursing service. Women's work programs shipped new clothing and layettes valued at $488,000 to 24 countries in 1968, as well as articles of clothing and surgical dressings to Red Cross hospitals in Canada. Red Cross youth programs assisted needy Canadian children at a cost of almost $200,000 in 1968, donating funds for medical treatment, heart surgery, prosthetic appliances, dental care, including provision of three mobile dental coaches and support of eight dental clinics, and speech therapy and kindergartens for the deaf. In addition, youth programs extended assistance to children in other countries totalling some $120,000. The Red Cross as a whole extended overseas aid amounting to $1,500,000.

Chief sources of funds for the work of the Canadian Red Cross are United Appeals, government grants and annual Red Cross campaigns.

The Canadian Rehabilitation Council for the Disabled.—This agency was founded in 1962 by the merging of the Canadian Foundation for Poliomyelitis and the Canadian Council for Crippled Children and Adults. The Council promotes co-operation among agencies assisting the rehabilitation of disabled persons, such as the national agencies for cerebral palsy, hemophilia and cystic fibrosis and provincial councils for the disabled, and offers consultative services, public education, and training courses and seminars for rehabilitation workers. Its head office is in Toronto. The Council is affiliated with the International Society for Rehabilitation of the Disabled and the Canadian Medical Association. Its official publication is the *Rehabilitation Digest*.

In the smaller provinces the two founding organizations have merged their programs but in British Columbia, Ontario and Quebec, separate societies for handicapped children continue to administer case-finding, restorative and related services including parent counselling, camping and recreation, and finance the programs through Easter Seal campaigns. The foundations for the disabled in the three larger provinces, which are financed by the March of Dimes or United Appeals, provide services to disabled adults, placing more emphasis upon vocational rehabilitation and the establishment of sheltered workshops.

The Canada Safety Council.—This organization was established in 1968 by the merger of three organizations—the Canadian Highway Safety Council, the National Safety League of Canada and the Canadian Industrial Safety Association. The head office of the

Council is in Ottawa. Its goal is to prevent accidents and thereby save lives and reduce injury and suffering. The Council estimates that over 11,000 Canadians die accidentally each year and that hundreds of thousands are seriously injured. The Council provides training courses related to safety, such as driver training, defensive driving, high school driver education, and baby-sitter training. Public education projects include Safe Driving Week, Fire Prevention Week, Child Safety Week, Farm Safety Week, safety-belt campaigns, car-check campaigns, and pedestrian-cyclist safety campaigns. Funds are obtained from federal and provincial government grants, business and industry, national labour organizations, provincial motor leagues, and automobile associations.

The Canadian Tuberculosis and Respiratory Disease Association.—This agency was founded in 1900 for "the prevention of consumption and other forms of tuberculosis in Canada". Along with its medical arm—the Canadian Thoracic Society established in 1960—the Association has extended its work to cover all respiratory illnesses. The national office in Ottawa and the ten provincial and numerous local branches co-operate with public health agencies in promoting special programs including public and professional education, prevention, diagnosis, treatment and rehabilitation. Consultation services are provided for federal and provincial health departments. The case-finding program of the Association is carried out at the local level using mass X-ray screening surveys directed in particular at high-risk groups.

In the fields of research and professional education, the Association distributes an estimated $484,000 annually. It also supports actively the efforts of the International Union Against Tuberculosis in less developed countries where tuberculosis is a serious problem.

The Canadian Welfare Council.—The Council, established in 1920, seeks to give leadership on matters concerning the social welfare of Canadians. Member organizations include community funds and councils, other private social agencies, various federal, provincial and municipal departments, and citizen groups and individuals active in the fields of health, welfare and recreation. It furnishes information, technical consultation and field services in the main areas of social welfare and provides a means of co-operative planning and action by public and private agencies. It directs attention to changing social needs and proposes new policies and services in these areas. Through public education programs, it informs the public and political bodies on problems, policies and objectives of social welfare services including health programs.

The policies and programs of the Council are determined by its members under the leadership of a nationally representative board of governors. With professional staff assuming executive functions, the members work together through Divisions of Family and Child Welfare, Public Welfare, Corrections, Community Funds and Councils, and Aging, and through special committees.

The Council's current research studies include the first Canadian survey of visiting homemaker services and a national study of day-care centres for children. The Council publishes the periodicals *Canadian Welfare, Bien-Être Social Canadien, The Canadian Journal of Corrections,* and a directory of Canadian welfare services. Funds to support its programs are derived mainly from United Appeals, membership fees, individual donations and government grants.

The Health League of Canada.—This agency, established in 1919 as the National Committee for Combatting Venereal Disease, is dedicated to the education of the Canadian public on matters of public health, both in prevention and in early recognition of disease, thereby improving the health standards of Canadians. It has dealt with immunization, fluoridation of water, gerontology, nutrition, and child and maternal health. In 1952, it was appointed the Canadian Citizen's Committee of the World Health Organization. The League publishes the magazine *Health,* which contains articles by professional health workers, and sponsors National Health Week and National Immunization Week. It is

nanced by government grants, voluntary donations, and membership fees. In co-peration with its affiliates in Quebec City and Montreal, the League administers its rograms from the national office in Toronto.

The Multiple Sclerosis Society of Canada.—The Society was organized in 1948 to upport medical research into the causes and treatment of multiple sclerosis. In 1968-69 s research expenditures reached $103,000, a record high. Through its head office in oronto and five divisions and local chapters located in ten provinces, the Society attempts, n co-operation with other agencies serving the disabled, to meet the special needs of patients ith multiple sclerosis. A survey in Toronto in 1968 demonstrated that these needs, as xpressed by patients and their families, were often more social than financial. To improve rvices to patients, several Ladies' Associations for Multiple Sclerosis have been organized, nd some local chapters have begun patient registries. The Society also provides public ducation and information services, including the quarterly bulletin *Multiple Sclerosis*.

Funds for support of its programs come from bequests and grants, donations, United ppeals, and various other projects. The Society is a member of the International Federa-on of Multiple Sclerosis Societies, through which affiliation research of projects is co-rdinated and information on new developments is exchanged.

The Muscular Dystrophy Association of Canada.—This Association was organ-ed in 1954 to increase knowledge of muscular dystrophy, to improve facilities for diagnosis nd treatment, and to foster research with the aim of developing more successful treatment. he national office is in Toronto and there are local chapters located in 15 major cities. Of ne estimated 10,000 Canadians suffering from muscular dystrophy, about one quarter are rolled with the Association. It supports seven muscular dystrophy clinics and provides mited physiotherapy, certain orthopaedic devices and wheelchairs, and transportation to hools and clinics. Increasing emphasis is being placed on genetic counselling services.

Independent campaigns carried out with the assistance of local firemen provide most f the revenue, augmented by United Appeal funds and grants from municipal and pro-incial governments. Most of the funds are used for grants for medical research; 70 studies ere assisted in 1968-69, both in Canada and abroad, at a cost of $715,544.

The National Cancer Institute of Canada.—This agency was organized in 1947 support and co-ordinate research on cancer, promote professional education in cancer, mpile and interpret cancer statistics, and assist in the co-ordination of provincial cancer ntrol programs. Full-time research positions for over 30 scientists have been established, nd capital grants to six universities have facilitated the construction of laboratory space r cancer research. Of the total annual budget, 90 p.c. (about $3,800,000 in 1970) is al-cated to research, while most of the remainder provides training in cancer research. nder an agreement with the Canadian Cancer Society with which it is affiliated, the nstitute does not appeal to the public for funds. Its main sources of income are the anadian Cancer Society and federal and provincial grants.

The St. John Ambulance Association.—The Order of the Hospital of St. John of rusalem held its earliest recorded first-aid course in Canada in Quebec in 1883. Incor-orated on a national basis in 1914 with headquarters in Ottawa, the organization operates rough ten provincial Councils and seven "Special Centres". The Order is composed of vo sections—the St. John Ambulance Association and the St. John Ambulance Brigade. he objectives of the Association are to provide training in first-aid, home nursing and child re, in 1969 reaching 130,000 trainees. The Brigade provides emergency services to the ublic through uniformed volunteer members numbering about 12,000.

Courses of instruction are made available to the general public, police, firefighters, dustry, the armed forces, schools, civil defence and youth organizations. Emergency rvices provided include two-way radio equipment, emergency oxygen supplies, motor ats and underwater gear, ski and snowshoe patrols, and highway first-aid posts. The

two-hour "save-a-life" program teaches artificial respiration methods to an estimate 150,000 persons annually. Bursaries to nurses-in-training have amounted to $36,000 i the past seven years.

Funds are obtained from private donations, United Appeals, the sale of textbooks an other publications, and fees for training government personnel. Publications include *Th St. John News*, films, and radio and television scripts. In 1969, the Association receive $900,000 from the general public, industry and various levels of government in support o its work.

The Victorian Order of Nurses.—The basic function of this organization, create in 1897, is to provide nursing services in the home. In 1970, the VON directed 16 co ordinated home-care programs and participated in 11 additional such programs by supply ing either the nurse-administrator or the nursing service. Through 107 branches locate in all provinces except Prince Edward Island, these services are made available to a estimated 60 p.c. of the population of Canada, to anyone in the community regardless o age or financial status and on a 24-hour basis, for acute, chronic or convalescent patient

In 1968, 109,151 patients were assisted, most of whom were medical and surgica patients and the remainder were maternity patients and new-born infants. A sick-room supply loan service is also provided. Other services are offered according to local needs, i shared programs with other agencies or in demonstration programs. The Order has co operated, when requested, in the establishment of services related to home care, such a housekeeping, home help, and meals-on-wheels. Additional services may include schoo health clinics, immunization clinics, classes for expectant parents and part-time nursin services to small industries.

Funds for the organization come from a federal grant, United Appeals, individua donations, membership fees and an annual campaign. The national office is located i Ottawa.

PART V.—UNIFORM LEGISLATION GOVERNING PRIVATE PENSION PLANS

The enactment of the Canada and Quebec Pension Plans emphasized the need fo uniform private pension legislation across Canada. Ontario amended the Ontario Pensio Benefits Act with effect from July 30, 1965, and Quebec enacted the Supplemental Pensio Plans Act with effect from July 15, 1965. The Pension Benefits Act of Alberta came int force on Jan. 1, 1967, and that of Saskatchewan was assented to on Apr. 1, 1967. Th provincial legislation governs all pension plans operating on and after the effective date i the particular province. Similar legislation at the federal level, the Pension Benefit Standards Act, was assented to on Mar. 23, 1967, and is applicable only to pension plan having members employed in works, undertakings and businesses (generally, banks an interprovincial transportation and communication) that are under federal jurisdiction

Under these Acts, basic standards have been established with which pension funds o plans organized and administered to provide a pension benefit to employees must comply i order to receive registration, and they are not allowed to operate in these provinces or i the federal areas of responsibility unless they have received registration.

By agreement, each of the provinces mentioned above recognizes similar legislation o the others, so that a pension plan that has been registered and reports in one province doe not have to seek registration or duplicate all its reporting procedure in another of thes provinces if it extends its operations to employees in that other province.

The legislation requires that an employee's benefits under a pension plan become fully vested (i.e., he has full entitlement to those benefits, which will be paid to him on retirement when he reaches age 45 and has completed either a minimum of ten years of membership i a pension plan or ten years of service with the one employer. Moreover, should th

mployee leave his job or resign his membership in the plan prior to retirement, at least 5 p.c. of his total benefits under the plan must be locked-in for purposes of his pension, llowing him to withdraw no more than 25 p.c. of the commuted value of those benefits n a lump sum. These rules apply as from the qualification date established under the egislation or from the date the plan was established if it commenced operations after the ualification date.

Other provisions of this legislation are intended to ensure the full solvency of these ension plans within a specified period of time, to restrict the types of investments in hich the funds of the plan may be invested, to provide that an employee's pension rights re portable if he should change his job, and to establish that each interested party to a ension plan is adequately informed as to the provisions of the plan.

PART VI.—VETERANS SERVICES*

The Department of Veterans Affairs administers most of the legislation known collectively as the Veterans Charter and also provides administrative facilities for the Canadian Pension Commission, which administers the Pension Act and Parts I to X of the Civilian War Pensions and Allowances Act; for the War Veterans Allowance Board, which administers the War Veterans Allowance Act and Part XI of the Civilian War Pensions and Allowances Act; and for the Secretary General (Canada) of the Commonwealth War Graves Commission.

The principal benefits now available to veterans are medical treatment for those ligible to receive it, land settlement and home construction assistance, educational assisance for the children of the war dead, general welfare services, disability and dependants ensions and war veterans allowances. The work of the Department, except the administration of the Veterans' Land Act, is carried out through 18 district offices and four subdistrict offices in Canada and one district office in England; the benefits of the Veterans' Land Act are administered through seven regional offices and 26 district offices across Canada.

The twenty-fifth anniversary of the Normandy D-Day landings of World War II—une 6th, 1944—was observed in June 1969 by Canada and other allied countries. Remembrance ceremonies were held at several places in France, the principal one at the Beny-sur-Mer Canadian War Cemetery where lie 2,043 Canadians who lost their lives in the landings nd beachhead fighting. This cemetery is near where the 3rd Canadian Division landed n D-Day.

The White Paper on veterans pensions for disability and death related to military ervice was presented to the Parliamentary Standing Committee on Veterans Affairs in ugust 1969. The White Paper is a statement of how the Government proposes to implement those recommendations of the Committee to Survey the Work and Organization of he Canadian Pension Commission (Woods Committee) that commend themselves to the Government. Some of these recommendations have already been put into effect under existing authorities.

On Sept. 14, 1969, the cornerstone was laid for the new $14,200,000, 13-storey Ste Anne's Hospital at Ste Anne de Bellevue, Que., to be completed in the autumn of 1970. This hospital will have 678 beds for chronic-care veterans and a psychiatric centre of 290 eds.

* Prepared by the Department of Veterans Affairs.

Section 1.—Pensions and Allowances

Disability and Dependants Pensions*

Canadian Pension Commission.—The Canadian Pension Commission administers the Pension Act (RSC 1952, c. 207, as amended) and Parts I to X of the Civilian War Pensions and Allowances Act (RSC 1952, c. 51, as amended). The members of the Commission are appointed by the Governor in Council who may also impose upon the Commission duties in respect of any grants in the nature of pensions, etc., made under any statute other than the Pension Act. It reports to Parliament through the Minister of Veterans Affairs. The Commission has district offices in principal cities across Canada with a Senior Pension Medical Examiner in charge.

The Pension Act.—Previous issues of the Year Book contain information on the development of Canadian pension legislation together with yearly statistics on numbers and liabilities.

The Pension Act makes provision for the payment of pensions in respect of disability or death resulting from injury or disease incurred during or attributable to service with the Canadian Forces in time of war or peace. Provision is also made for supplementing, up to Canadian rates, awards of pension to or in respect of Canadians for disability or death suffered as a result of service in the British or Allied Forces during World War I or World War II, or payment of pension at Canadian rates in cases where the claim has been rejected by the government of the country concerned.

Following are the rates of pension under Schedules A and B of the Pension Act from 1919 to date (October 1970).

Rates Per Annum for 100-p.c. Disability Pensioners (Schedule A)

Effective Date	*Disability Pensioner*	*Wife*	*One Child*	*Two Children*	*Each Subsequent Child*
	$	$	$	$	$
Sept. 1, 1919	720	180	144	264	96
Sept. 1, 1920	900	300	180	324	120
Oct. 1, 1947	1,128	372	228	408	144
Jan. 1, 1952	1,500	540	240	420	144
July 1, 1957	1,800	600	240	420	144
Mar. 1, 1961	2,160	720	324	564	192
Sept. 1, 1964	2,400	768	360	624	216
Sept. 1, 1966	2,760	768	360	624	216
Jan. 1, 1968	3,180	876	408	720	240

Rates Per Annum for Widows and Dependants (Schedule B)

Effective Date	*Dependent Parent*	*Widow*	*One Child or Dependent Brother or Sister*	*Two Children or Dependent Brothers or Sisters*	*Each Subsequent Child or Dependent Brother or Sister*
	$	$	$	$	$
Sept. 1, 1919	576	576	180	300	96
Sept. 1, 1920	720	720	180	324	120
Oct. 1, 1947	900	900	228	408	144
Jan. 1, 1952	900	1,200	240	420	144
July 1, 1957	1,080	1,380	240	420	144
Mar. 1, 1961	1,296	1,656	324	564	192
Sept. 1, 1964	1,428	1,824	360	624	216
Sept. 1, 1966	1,428	2,100	360	624	216
Jan. 1, 1968	1,632	2,400	408	720	240

Note.—The rates for orphan children or orphan brothers and sisters are double those shown above. The pensionable children of widows who have been awarded pension are paid at orphan rates. Pensions awarded to parents or brothers and sisters may be less than the amounts shown in accordance with the provisions of the Pension Act.

* See Appendix III for statement re increases in pensions and allowances announced in the House of Commons, Dec. 2, 1970.

As may be noted above, the basic rate of pension for widows (which previously applied o widows of all ranks up to and including that of Colonel) was increased from $2,100 to 2,400 a year. This rate being higher than that formerly payable to widows of higher anks, i.e., $2,160, the increase had the effect of increasing pensions for the latter and naking the rate for widows the same for all ranks. Disability pensions have been payable t the same rate for all ranks since the 1966 increase, so that rank now has a bearing only n parent's pension under Schedule B of the Act. The maximum rate for the dependent arent of a deceased member of the forces who held the rank of Colonel and all ranks below s now $1,632 a year; where the deceased held a higher rank, the maximum rate is $2,160 a ear. The maximum rate that may be paid to a dependent parent if there is a widow in eceipt of pension is $732 a year and the maximum additional amount that may be paid hen there are two parents is $348 a year.

For assessments lower than 100 p.c., the awards under Schedule A are proportionately ess. Attendance allowance, which is payable to a pensioner who is totally disabled, elpless and in need of attendance, and which varies from a minimum of $480 to a maximum f $3,000 a year depending on the degree of attendance required, is paid in addition to ension. Although a pensioner must be totally disabled to receive this allowance, the isability resulting in the need of attendance may be non-pensionable.

The Civilian War Pensions and Allowances Act, Parts I to X, provides for the payment f pensions to or on behalf of persons who served in certain civilian groups that were closely ssociated with the war effort during World War II and who suffered injury or death as a esult of such service; these include merchant seamen, saltwater fishermen, auxiliary ervices personnel, ferry pilots of the RAF Transport Command, firefighters who served in ritain, etc.

1.—Pensions in Force under the Pension Act, as at Dec. 31, 1969

Service	Disability		Dependant		Disability and Dependant	
	Pensions in Force	Liability	Pensions in Force	Liability	Pensions in Force	Liability
	No.	$	No.	$	No.	$
orld War I	24,931	33,161,513	13,016	30,338,284	37,947	63,499,797
orld War II	103,949	115,015,905	15,265	30,233,681	119,214	145,249,586
egular Force	3,053	2,529,424	653	1,659,626	3,706	4,189,050
ecial Force	1,987	1,921,599	178	328,027	2,165	2,249,626
Totals	**133,920**	**152,628,441**	**29,112**	**62,559,618**	**163,032**	**215,188,059**

ar Veterans Allowances and Civilian War Allowances

War Veterans Allowance Board.—The War Veterans Allowance Board is a quasi-udicial body consisting, at present, of ten members appointed by the Governor in Council. he Board administers the War Veterans Allowance Act and Part XI of the Civilian War ensions and Allowances Act and reports to Parliament through the Minister of Veterans ffairs. The Board acts as an appeal court for an applicant or recipient aggrieved by a ecision of a District Authority and may, on its own motion, review and alter or reverse ny adjudication of a District Authority. The Board is also responsible for instructing nd guiding the District Authorities in the interpretation of policy and for advising the inister with respect to Regulations concerning the administration of the Act.

War Veterans Allowance District Authorities.—In 1950, 18 District Authorities ere established in the regional districts of the Department of Veterans Affairs and granted ll power to adjudicate on all matters arising under the War Veterans Allowance Act. In

1960, a separate authority—the Foreign Countries District Authority—was established to look after recipients living outside Canada. The members of a District Authority are employees of the Department of Veterans Affairs appointed by the Minister with the approval of the Governor in Council.

War Veterans Allowances.—The War Veterans Allowance Act, 1952, as amended, provides an allowance to otherwise qualified war veterans who, because of age or infirmity, are no longer able to derive their maintenance from employment and to ensure that their income does not fall below a specified scale. Widows and orphans of qualified veterans are eligible for benefits. Since its inception in 1930, the Act has been amended on 14 different occasions to meet additional needs of veterans and their dependants. The most recent amendment increased monthly rates and annual income ceilings, effective Sept. 1, 1966 to:—

Item	*Monthly Rate*	*Annual Income Ceiling**
	$	$
Single	105	1,740
Married	175	2,940
One orphan	60	1,008
Two orphans	105	1,608
Three or more orphans	141	2,016

* Where a recipient or spouse is blind, the income ceiling is $120 higher.

At Dec. 31, 1969, there were 82,712 recipients of War Veterans Allowances, made up of 50,008 veterans, 32,384 widows and 320 orphans; 671 of the total resided outside Canada. The annual liability for all recipients was estimated at $89,127,000.

Civilian War Pensions and Allowances.—Part XI of the Civilian War Pensions and Allowances Act makes available to certain groups of civilians, their widows and orphans, benefits similar to those available to veterans under the War Veterans Allowance Act. These groups, which performed meritorious service in World War I or World War II, are: Canadian merchant seamen of both wars; non-Canadians who served in Canadian merchant ships in either war; Canadian voluntary aid detachments of World War I; Canadian fire-fighters of World War II; Canadian welfare workers of World War II; Canadian trans-atlantic aircrew of World War II; and Newfoundland Overseas Forestry Unit of World War II.

At Dec. 31, 1969, there were 1,892 civilians, 503 widows and nine orphans in receipt of Civilian War Allowances, a total of 2,404, of whom one resided outside Canada. The annual liability was estimated at $3,329,000.

Veterans' Bureau

The Veterans' Bureau, which is a branch of the Department of Veterans Affairs, assists former members of the Armed Forces and their dependants and former members of the Merchant Navy and the Royal Canadian Mounted Police in preparing and presenting claims to the Canadian Pension Commission; it has been in operation for 40 years. The Chief Pensions Advocate, who heads the Bureau at Ottawa, is assisted by pensions advocates, all of whom are lawyers, located in the departmental district offices and Head Office. The pensions advocates appear as counsel for applicants before Appeal Boards of the Commission and, in addition, advise pensioners and applicants upon any provision of the Pension Act or phase of pension law or administration that may have a bearing on their pension claims. No charge is made for the services of the Bureau.

During 1969, the Veterans' Bureau submitted 6,925 claims to the Canadian Pension Commission for adjudication, of which 39 p.c. were wholly or partially granted. These included 1,159 claims presented to Appeal Boards of the Commission.

Section 2.—Welfare and Treatment Services

Welfare Services

Welfare services for veterans and, where appropriate, their dependants are provided by the Welfare Services Branch. These include the administration of assigned statutes; the conducting of field work and reporting for other branches of the Department, the Canadian Pension Commission, the War Veterans Allowance Board and Services Benevolent Funds; and the provision of a rehabilitation and welfare program of advice and counselling including referral, where indicated, to other public or private agencies, veterans organizations, etc.

War Service Grants.—War service gratuities payable under the War Service Grants Act to veterans of World War II and the operations to restore peace in Korea are now payable only in cases where delayed application is acceptable. Re-establishment credit payable under the same Act was available up to Oct. 31, 1968. Payment of the credit, except for a balance of $50 or less, is not made in cash to the veteran but is released on his behalf for specified purposes. Up to Dec. 31, 1969, a total of $315,616,977 had been paid out and unused balances amounted to $8,266,647. During the year ended Dec. 31, 1969, $7,100 was paid out, made up of $6,520 for purchases of homes and for repairs and furniture; $567 for purchases of businesses, tools and equipment; and $13 for miscellaneous items such as insurance, special equipment for training, clothing, etc.

Assistance Fund.—Recipients of benefits under the War Veterans Allowance Act and Part XI of the Civilian War Pensions and Allowances Act living in Canada may be given help from the Assistance Fund if their total income is lower than the permitted maximum. Assistance may take the form of a monthly supplement based on shelter, fuel, food, clothing, personal care and specified health costs or of a single award to meet an unusual or emergency need. The number of persons assisted to Dec. 31, 1969 was 18,447, the number in receipt of monthly supplements at the end of the year was 15,463 and Fund expenditures to Dec. 31, 1969 amounted to $5,437,760; comparable figures to Dec. 31, 1968 were 17,188, 14,238 and $4,446,849, respectively.

Education Assistance to Children.—The Children of War Dead (Education Assistance) Act provides help in the form of allowances and the payment of fees for the post-secondary education of children of those whose deaths have been attributed to military service. Assistance is restricted to children attending, in Canada, educational institutions which require secondary school graduation, matriculation or equivalent standing for admission. These include, in addition to universities and colleges, such facilities as hospital schools of teaching and institutes of technology. From its inception in July 1953 to Dec. 31, 1969, expenditures totalled $8,839,061, of which $4,764,521 was spent in allowances and $4,074,540 in fees. By the end of December 1969, 5,145 children of Canada's war dead had been approved for training. Of these, 2,183 had successfully completed training—902 had obtained degrees in arts and science, 454 in education, 146 in engineering and applied science, 46 in social work, 38 in medicine, 41 in law, 143 in other university faculties, 344 in nursing, 257 in teaching, 312 in administrative and technological fields. At the same date, there were 747 students in university and 192 in non-university courses receiving assistance.

Veterans Insurance.—The Returned Soldiers Insurance Act (SC 1920, c. 54 as amended) provided eligibility to contract for life insurance with the Federal Government up to a maximum of $5,000 to any one veteran of World War I. No policies were issued after Aug. 31, 1933. There were 48,319 policies issued during the eight years in which the Act was open amounting to $109,299,500 and, of these, there were 4,727 in force with a value of $10,268,481 on Dec. 31, 1969.

The Veterans Insurance Act (RSC 1952, c. 279 as amended) enabled veterans following their discharge and widows of those who died during World War II service to contract with the Federal Government for a maximum of $10,000 life insurance. Veterans with active service in Korea were extended eligibility by virtue of the Veterans Benefit Act 1954. The period of eligibility to apply for this insurance ended Oct. 31, 1968. To Oct. 31, 1968, 56,148 policies in the amount of $185,141,500 had been issued and, of these, 25,070 policies with a value of $80,917,204 were in force on Dec. 31, 1969.

Rehabilitation and Welfare.—Welfare officers at Departmental District Offices work closely with other branches of the Department, with other public agencies at all levels and with private agencies and organizations in assisting veterans and their dependants to deal with problems of social adjustment, particularly those associated with physical disabilities or the disabilities of increasing age. The latter occur more frequently, of course, as the age of the veteran population increases. A program of university, vocational, technical and home training, with allowances, is provided for disabled pensioned veterans and vocational rehabilitation is also promoted by training assistance. Sheltered workshops at Toronto and Montreal and home assembly work in other centres produce poppies and memorial wreaths associated with Remembrance Day observances.

Treatment Services

The Treatment Services Branch of the Department of Veterans Affairs provides medical and dental services for entitled veterans throughout Canada as well as for members of the Armed Forces, the Royal Canadian Mounted Police, and the wards of other governments or departments at the request and expense of the authorities concerned. Prosthetic services are provided to entitled veterans by the Department of National Health and Welfare but paid for by the Department of Veterans Affairs.

The Branch provides examination and treatment to disabled pensioners for their pensionable disabilities, and provides treatment to war veterans allowance recipients (but not to their dependants) and veterans whose service and financial circumstances render them eligible for free treatment or at a cost adjusted to their ability to pay. If a bed is available, any veteran may receive treatment in a Departmental hospital on a guarantee of payment of the cost of hospitalization. The pensioner receives treatment for his pensionable disabilities regardless of his place of residence but service to other veterans is available in Canada only. Where Departmental facilities are not readily accessible, an eligible veteran may obtain treatment at the expense of the Department in an outside hospital from a doctor of his choice. Domiciliary care may be provided to eligible veterans in Departmental facilities where the need for active or chronic treatment is sufficiently light, provided that excess beds are available.

Under the Federal Provincial Hospital Insurance program, DVA hospitals are recognized for the provision of insured services to veterans. Where treatment is given for a non-pensioned condition at a DVA hospital to a veteran, or elsewhere to a veteran eligible under the Veterans Treatment Regulations, the hospitalization is an insured service under the Federal Provincial Hospital Insurance program and his medical care is an insured service under the Federal Provincial Medical Care Insurance program in provinces where it has been introduced. The Department pays premiums where required on behalf of veterans who are in receipt of War Veterans Allowance.

Hospital Facilities.—Treatment is provided in nine active treatment hospitals located at Halifax, N.S.; Saint John, N.B.; Montreal and Ste Anne de Bellevue, Que.; London, Ont.; Winnipeg, Man.; Calgary, Alta.; and Vancouver and Victoria, B.C.; and in three domiciliary care homes at Ottawa, Ont.; Saskatoon, Sask.; and Edmonton, Alta. The rated bed capacity of these institutions at Dec. 31, 1969, was 6,005 beds. It should also be noted that in Ottawa both acute and chronic cases that require definitive treatment are admitted to the National Defence Medical Centre. A veterans pavilion of 67 beds is

located at St. John's General Hospital, St. John's, Nfld.; 1,200 beds are available at Sunnybrook Hospital in Toronto and 150 at the Centre Hospitalier de l'Université Laval in Quebec for the priority use of veterans, and some 500 beds in community hospitals located in St. John's, Nfld.; Charlottetown, P.E.I.; Kingston, Ont.; Regina and Saskatoon, Sask.; and Edmonton, Alta.

Medical Staff and Training Programs.—The active and consulting medical staffs of departmental hospitals are usually private practitioners and specialists who also hold teaching appointments on the medical faculties of the various local universities. Their appointment and selection is normally recommended by the Deans of Medicine of the universities with which the departmental hospitals are affiliated. This affiliation results in approval by the Royal College of Physicians and Surgeons of Canada for postgraduate teaching in resident teaching programs of non-core years in medicine, surgery, psychiatry and other specialties. Some departmental hospitals are also affiliated with technical schools and act as hospital teaching units in technical school programs for paramedical sciences such as laboratory and radiology technicians. In addition, residency training programs are given in psychology, dietary, physiotherapy and occupational therapy, and in the medical social services at both the undergraduate and graduate levels. A postgraduate residency program in hospital pharmacology and pharmacy methodology is conducted at Westminster Hospital, London, Ont. At Camp Hill Hospital in Halifax the department has become affiliated with the university medical school in the undergraduate clinical teaching program, in addition to participating in graduate residency training.

Clinical Research Program.—During 1970, there were 38 projects in progress under the clinical research program. This program is varied but in the main deals with conditions affecting aging, which the Department is in a special position to investigate. Self-contained clinical investigation units are established in active treatment hospitals located at Montreal, London, Winnipeg and Vancouver.

Section 3.—Land Settlement and House Construction

The Veterans' Land Act, 1942, as amended, provides financial, technical and supervisory assistance to World War II and Korean Force veterans, to enable them to engage in agriculture or commercial fishing on a full-time basis; to acquire, build or improve homes; and to settle on provincial, federal and Indian reserve land. Loans may be made of up to $40,000 for full-time farmers on economic farm units, to $18,000 for small family farmers, to $16,000 for small holders (part-time farmers) and to $18,000 for veterans building houses on city-size lots. The financial assistance available under the Act is generally comparable to that available to non-veterans under the Farm Credit Act and the National Housing Act.

From inception of the Act to Dec. 31, 1969, 126,607 veterans were settled under the provisions of the Act; 31,291 were established as full-time farmers, 76,565 as small holders, 5,648 as Crown land settlers, 1,409 as commercial fishermen, 1,774 Indian veterans were established on reservations and 4,313 veterans acted as their own contractors in building homes on city-size lots. Subsequent to settlement, 17,627 farmers and 13,883 small holders and commercial fishermen were given additional financial assistance. In 1969, loans amounting to over $90,998,604 were approved on behalf of 9,358 veterans. From inception of operations to the end of 1969, $1,028,807,174 was spent on repayable loans, advances and non-repayable grants and 62,524 veterans had earned conditional grants of $111,385,000. By the end of that year, 45,018 of them had successfully completed their settlement contracts—15,346 farmers, 22,996 small holders, 572 commercial fishermen, 4,618 Crown land settlers, and 1,486 Indian veterans on reservations.

Field Officers highly trained in the techniques pertaining to agriculture, construction and land appraisals provide advisory, supervisory and appraisal field services. During 1969, 7,155 properties were appraised, included in which were 175 for the Indian off Reserve

and Eskimo Housing Program and 101 special assignments carried out on behalf of other government departments and agencies. Altogether, 1,252 new houses were started—1,207 for small holders and commercial fishermen, 40 farm homes and five on city-size lots—and 1,548 new houses were completed. Two construction schools were organized, attended by 111 veterans.

During the fiscal year 1968-69, instalments falling due on properties purchased by veterans under the Act amounted to $30,088,000, excluding share-of-crop payments; over 95 p.c. of the total amount due was collected and 1,099 veterans under share-of-crop agreements paid $1,334,000.

By Dec. 31, 1969, 14,796 veterans were insured under the Veterans' Land Act group life insurance for almost $143,072,000. Since inception of the group plan, 164 insured veterans died and $1,224,828 was paid to retire their indebtedness.

2.—Summary of Operations Under the Veterans' Land Act, as at Dec. 31, 1969

Item	Full-Time Farming	Small Holding	Commercial Fishing	Provincial Lands	Federal Lands	Indian Reserves	City-Size Lots	Total
Settlements made.....No.	31,291	76,565	1,409	5,082	566	1,774	4,313	126,607[1]
Additional loans made..... "	17,627	13,756	127	—	—	—	—	31,510
Total loans made..... "	48,918	90,321	1,536	5,082	566	1,774	4,313	158,117[1]
Public funds spent.....$'000	328,182	648,053	7,816	11,271	1,231	3,804	38,260	1,038,617[1]
Conditional grants earned.....No.	23,702	32,031	924	4,040	341	1,486	—	62,524
$'000	49,351	46,775	1,686	9,386	798	3,389	—	111,385
Grants earned—titles released to veterans.....No.	13,802	18,596	555	4,040	341	1,486	—	38,820
Accounts under administration..... "	12,308	45,176	660	246	90	—	8	59,464[2]
Houses built..... "	2,882	30,197	336	1,464	131	—	4,319	39,329
Houses under construction..... "	29	1,043	3	13	—	—	5	1,093

[1] Includes 5,607 civilian purchaser accounts from inception. [2] Includes 976 active civilian purchaser accounts.

Section 4.—Commonwealth War Graves Commission

The current Charters of the Commonwealth War Graves Commission consist of two documents—the Original Charter of Incorporation dated May 21, 1917, and the new Supplemental Charter dated June 8, 1964. Under these Charters the Commission is entrusted with the marking and maintenance in perpetuity of the graves of those of the British Empire and Commonwealth Armed Forces who lost their lives between Aug. 4, 1914 and Aug. 31, 1921, and between Sept. 3, 1939, and Dec. 31, 1947, and with the erection of memorials to commemorate those with no known grave.

The Canadian High Commissioner in London, England, is the official Commission member for Canada, the Minister of Veterans Affairs is the Agent of the Commission in Canada, and the office of the Secretary-General of the Canadian Agency is in the Veterans Affairs Building, Ottawa.

CHAPTER VII.—EDUCATION

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

PART I.—FORMAL EDUCATION*

Section 1.—The Current Education Situation

The cost of education in Canada for the year ended Mar. 31, 1970, has been estimated at $6,900,000,000, an amount that represents about 20 p.c. of all taxes levied by federal, provincial and municipal governments. During the 1960s, school and university enrolment increased by 50 p.c. and staff by 70 p.c., so that, as the 1970s began, approximately 30 p.c. of the entire population of Canada was either receiving or dispensing education.

Canada's educational administrators are deeply conscious of the fact that the young people of the country must be fitted to face the years ahead secure in the realization that they have been trained to meet all challenges that may arise in their future careers. The young man who chooses a technological trade and the young girl who chooses a business career must be confident of receiving instruction of as high a standard as those students intending to specialize in one of the professions. It is also essential to them that no young person in Canada be hindered from following the career of his or her choice by colour, race, creed, sex, social standing or financial limitations. Thus, Canada's requirements have in recent years become increasingly demanding and diverse. Courses offered in Canadian schools now seem almost limitless, from the elementary and secondary level where, in addition to the basic subjects, instruction is available in such cultural areas as music, drama and fine arts, and community colleges and vocational institutions where a widening range of advanced technological courses is given, to universities with numerous faculties and provisions for graduate study in many fields.

It should be noted, too, that in the late 1960s there was a dramatic change in attitude toward bilingual education in Canada. The Province of Quebec passed legislation rigidly

* Prepared in the Education Division, Dominion Bureau of Statistics. Some tables in the statistical Section include later figures than others but in each case the most recent data available at the time of writing (August 1970) are given.

enforcing equal emphasis on both languages in all schools. The Ontario Government rule that French shall assume sufficient importance in that province to ensure equal proficienc in both languages and that all-French schools should be established in those sections of th province where the population is predominantly French. In other parts of Canada alsc efforts are being made to provide for minority-group education.

The 1970s are ushering in an era when this country appears to be well on the wa toward surmounting many obstacles that have arisen in the field of education. Canadia universities have always had a world reputation for excellence and in the past decade the have increased still further in numbers and prestige. True, there have been domestic prob lems caused by student unrest but, through greater representation of students on admini strative boards resulting in better understanding between students and staff, these problem seem to have been largely overcome.

At the post-secondary level, a more uniform structure has emerged across the countr and these institutions are now almost universally known as "community colleges". In th Province of Quebec, 30-odd varied institutions, many of them formerly operated by religiou communities, are now known as "Collèges d'enseignement général et professionnel" an commonly referred to as CEGEPs; there are also about 20 private colleges in the provinc some of which will undoubtedly be absorbed into the CEGEP group within the next fe years. There has been a recent upsurge in the establishment of additional post-high scho vocational and technical institutions across Canada, which have been required to mee the labour market's rapidly increasing need for qualified technicians.

It is interesting to note that women today comprise about 35 p.c. of the full-tim university enrolment and that many are taking certain post-secondary courses which ha previously shown an all-male enrolment. For example, in 1968-69 the Ryerson Polytechnica Institute of Toronto reported 10 female enrolments in engineering, an equal number wer enrolled in law enforcement and crime detection at another Ontario institution, six wome were enrolled in chemical technology in Manitoba and 52 in the same course in Alberta Female interest in electronics and forestry is also evidenced by a few enrolments in suc courses in different institutions across the country.

At the elementary and secondary levels, the greatest change has been brought abou by the realization that some adjustment had to be made to overcome the wide varianc in aptitude among pupils and allow more flexibility in dealing with such individual diffe ences. This has resulted in a drastic revision of policies to include non-graded system subject promotion, changes in methods of examination and the extension of guidanc facilities.

One of the notable increases in teaching facilities is in the area of library servic A DBS survey showed that in the school year 1968-69, school libraries increased the stocks of books by nearly 8,000,000. These libraries provide up-to-date reference book on all subjects in the school curricula and have assumed increasing importance as resourc centres for audio-visual aids such as projectors, films, filmstrips, maps, tapes and record

Efforts are also being made to overcome the financial barriers to continuing educatio The investigations of demographers and sociologists are confirming and quantifying th long-held suspicions that financial constraints are operating to deny education to man Canadians who could profit from it. Various methods are therefore being sought t lighten the financial burden upon the individual and to equalize the rapidly increasin load being carried by the taxpayer. The Federal Government is assuming an increasingl prominent role in the education field, particularly in regard to the re-training progra of the Department of Manpower and Immigration involving adult technical and voc tional training, post-secondary and university education, all matters of prime concer to the nation as a whole. A recent major project involved the decision by the Depar ment of the Secretary of State to set aside $50,000,000 to be expended for the promotio of bilingualism across Canada.

Thus, ethical considerations concerning the duties of society in the satisfaction of th personal needs of the individual and economic considerations concerning the kinds

lividuals required to satisfy the manpower needs of society are combining to encourage e extension and equalization of educational opportunity. The rising costs of this en- avour are causing a reappraisal of traditional methods of financing education, tending ward the assumption of increasing proportions of the load by higher levels of government. ken along with other developments in the economic, social and cultural life of the com- nity, this is resulting in the Federal Government making a significant contribution ward the education of Canadians.

Two secondary schools in the Timmins–South Porcupine area of northern Ontario, one teaching in English and the other in French, co-operate to make the study of French a "langue vivante" for the English-speaking students. The schools exchange a few senior students every two weeks for three to five days.

Section 2.—Administration and Organization of Education

sponsibility for Education in Canada

Canada is a federal state, in which responsibility for the organization and administra- n of public education is exercised by the provincial governments. The Federal Govern- nt is directly concerned only with the provision of education for certain special groups— dian and Eskimo children and other children in the Yukon and Northwest Territories, mates of federal penitentiaries and families of members of the Armed Forces on military tions. In addition, the Federal Government finances re-training of adults, provides ancial support to the provinces amounting to at least 50 p.c. of operating costs of post- condary education, participates to a considerable extent in informal education and makes nts-in-aid for research personnel and equipment in universities.

Because each of the ten provinces has the authority and responsibility for organizing education system as it sees fit, organization, policies and practices differ from province province. Each has a department of education, headed by a minister who is a member

of the Cabinet. Ontario has, in addition, a Department of University Affairs under it Minister of Education. Each department is administered by a deputy minister wh is a professional educationist and a public servant. He advises the minister, supervis the department and gives a measure of permanency to its education policy, in gener carries out that policy, and is responsible for the enforcement of the Public School Ac The department of education usually also includes: a chief inspector of schools and staff of local inspectors; directors or supervisors of curricula, technical education, teache training, home economics, guidance, physical education, audio-visual education, corre spondence instruction and adult education; directors or supervisors of other section (according to the needs of the particular province); and technical personnel and clerks

Other provincial departments having some responsibility for operating school program are: departments of labour, which operate apprenticeship programs; agriculture depart ments, which operate agriculture schools; departments of the attorney-general or of welfare which operate reform schools; and departments of lands and forests, which operate fores ranger schools.

From the beginning, each department of education has undertaken, among other things to provide: (1) inspection services to ensure maintenance of standards; (2) the certificatio of teachers; (3) courses of study and lists of prescribed or approved textbooks; (4) financia assistance to local authorities in the construction and operation of schools; and (5) regula tions for the guidance of trustees and teachers. In return, each department require regular reports from the schools. When first introduced, government grants to school were based on such factors as number of teachers, enrolment, days in session and attendance Somewhat later, special grants were introduced in most provinces to meet a variety o expenses, such as the construction of the first school, the organizing of special classes the provision of transportation for pupils, school lunches and other contingencies. A number of provinces made provision for equalization grants, and now the majority hav a foundation program of one kind or another.

The work of the departments of education has grown considerably. Many have ex panded their services in the fields of health, audio-visual aids, art, music, agriculture special education, correspondence courses and pre-vocational and trade courses. At th same time there has been an increasing delegation of authority to local boards and schoo staffs. One illustration of this tendency is a reduction in the number of departmental (external) year-end examinations. Few provinces now provide for more than one or tw such examinations—at the end of the final and, in some cases, at the end of the secon last year of the secondary school course. Another illustration is the increasing use o lists of approved textbooks from which local authorities may make their own choice instead of lists of prescribed texts. Courses of study are now seldom planned by only on or two experts in the department; instead they result from conferences and workshop including active teachers and other interested individuals or bodies. In most province "curriculum construction" is considered to be a continuous procedure.

Local Units of Administration

In all provinces, schools are established and operated by local education authorities functioning under the terms of a Public School Act and held responsible to the provincia government and resident ratepayers for the actual operation of the local schools. Throug the delegation of authority, education has become a provincial-local partnership with th degree of decentralization reviewed intermittently.

Under recent amendments to provincial legislation, school units have been enlarge in all provinces except Prince Edward Island. In Quebec, the greater part of the Protestan system has been organized into larger units and the Roman Catholic system has reorganize into 55 regions its administrative structure for secondary education only. In the othe provinces, a comparatively recent innovation has been the establishment of community

colleges, in which at least the last one or two years of high school and the first one or two years of college are given. Most of these institutions offer both vocational and academic programs.

With the growth of cities and towns and of educational facilities and requirements, the old-time three-member local school board became inadequate as an administrative structure. The original school boards remained as units but provision was made for urban school boards with more members and generally with responsibility for both elementary and secondary schools, and for providing the necessary staff, buildings, equipment and transportation. The local boards still in existence in some districts have limited powers and duties, usually functioning in an advisory capacity and looking after buildings and grounds.

Recent Changes in Educational Systems and Procedures

During the past five years, many changes of major or minor character have occurred in the education field in all provinces and territories. The most important are outlined briefly in the following paragraphs.

Newfoundland.—Until recently, the system of education in Newfoundland, originally established in 1874, was strictly denominational. As a result of the recommendations of a provincial Royal Commission on Education and Youth set up in 1964, consolidation of the school systems of the major Protestant denomination has since taken place, but the Roman Catholic, Pentecostal and Seventh Day Adventist denominations still operate their own schools. The province is served by a network of 11 district vocational schools and post-secondary education is obtainable at the College of Trades and Technology and at the College of Fisheries, Navigation and Engineering, both located at St. John's. The Memorial University of Newfoundland, also situated at St. John's, offers degree courses as well as certificate courses in public administration, business administration and banking.

Prince Edward Island.—In this province, as in others, the trend is toward enlarged school districts rather than small educational units and plans are under way for further consolidation. Five per cent of the elementary and secondary pupils receive their entire education in French, and French is taught as a second language in all other schools. Two new institutions were opened in Charlottetown in the autumn of 1969—Holland College which offers post-secondary vocational training for the youth of the Island, and the University of Prince Edward Island which replaces the former Prince of Wales College and St. Dunstan's University.

Nova Scotia.—The Educational Assistance Act and certain amendments to the Education Act, both passed by the Legislature in 1968, enabled municipal units of an amalgamated area, in co-operation with the Minister of Education, to decide upon the composition of an amalgamated school board. In 1969, a modified junior high school program was authorized which will give students of average or above-average standing extra instruction in one or more subjects. In the same year, authority was given for an adult, who had not completed high school but had improved his educational standing through job experience or informal training, to be awarded a high school equivalency diploma. Such a diploma is issued on the basis of a series of tests, as developed and validated over a 25-year period by the Commission on Accreditation of the American Council on Education. Nova Scotia is the first Canadian province to be given permission to use these tests.

New Brunswick.—By authority of the Schools Act, which was passed by the New Brunswick Legislature in 1966 and became effective on Jan. 1, 1967, 422 school districts were replaced by 33 enlarged districts. The province is divided into seven regions, each administered by a regional superintendent, and each region has from four to six districts with enrolments of between 11,500 and 34,000 pupils. Schools are strictly non-denomina-

tional. District trustees range in number from nine to 15, some elected and the remainder appointed by the Lieutenant-Governor in Council from among residents eligible to serve.

Quebec.—In 1964, the Quebec Government, acting on recommendations of the provincial Royal Commission on Education (1961-64), passed legislation, under Bill 60, establishing a new administrative structure for the school system in that province; the Ministry of Education replaced the former Departments of Youth and of Public Instruction. The schools built under this new system and the additional teaching personnel and materials required for their operation resulted in an increase in expenditures for education from $592,000,000 in 1965 to a budgetary estimate of $913,480,000 in 1968. There are now 55 French and eight English regional school boards throughout the province. Thirty-three Collèges d'enseignement général et professionnel (known as CEGEPs) replace most of the former private Collèges classique. Kindergartens, admitting five-year-olds, are now part of the school system, registrations having risen from 17,000 in 1962-63 to an estimated 121,200 in 1969-70. Elementary education, intended for pupils aged six to 11, is given in public schools operated under the direction of local school boards. Since the autumn of 1968, pupils are enrolled in the first grade, only if they have reached the age of six as of Oct. 1. The federal Department of Indian Affairs and Northern Development assumes full responsibility for the education of Eskimo children living in northern Quebec, following the curriculum established by the Ministry of Education of Quebec.

Ontario.—Under recent amendments to the Ontario School Act, county districts now replace former individual units which were administered by three-member boards of trustees. The larger cities, such as Toronto and Ottawa, are excluded and operate their own school systems. Roman Catholic schools are given a choice. Approximately 95 p.c. of the schools in Ontario have abolished the separate administration of elementary and secondary schools which are now administered by the same board. With each county administered by one board, there has been a drastic reduction from thousands of districts to about 200. An important amendment to the Act in 1969 provides for schools for trainable retarded children to be established under the jurisdiction of a special divisional board of education.

Manitoba.—As of Jan. 1, 1969, 93 p.c. of public school enrolments in Manitoba came under the administration of 39 unitary division boards, responsible for all public elementary and secondary education within their jurisdictions. For the remaining enrolments, division boards are responsible for secondary education and district boards for elementary education. Increased emphasis is being placed on open-area classrooms, higher qualifications for teachers, and improved curricula. Other innovations include more meaningful curricula for Indian and metis children now incorporated into regular classes; emphasis in health programs on the abuse of alcohol and narcotics; audio-lingual programs in French and German at grade 10 level; and emphasis on continuous testing to replace formal examinations and on the concept of "independent study" for students in some secondary schools. Final examinations are set and marked under the auspices of the High School Examination Board of Manitoba. Entrance to university requires evidence of Board standing in at least three subjects, with school standing acceptable in two other subjects. In 1969, all Manitoba vocational colleges and institutes of technology became community colleges.

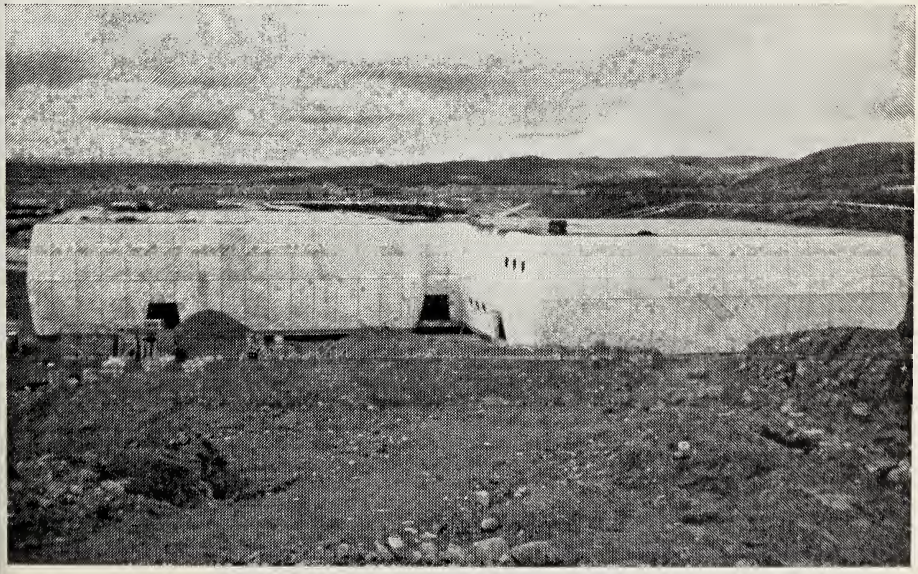
Saskatchewan.—Amendments to the Saskatchewan School Act, in effect at the start of the 1969 school year, authorized the initiation of an ungraded school system in Saskatchewan. Other amendments allow for the exclusion from the regular system of children so mentally deficient as to be incapable of learning. Educatable handicapped children attend special classes in regular schools and blind and deaf children between ages seven and 16 are educated in special schools.

Alberta.—The Province of Alberta is organized into divisions for purposes of education, each division being administered by its own school board. Recent legislation allows

for instruction in French during 50 p.c. of the school day in grades three through 12. In those schools where French is the language of instruction, one hour daily of English is required under the Alberta School Act in grades one and two. A commission on educational planning has been established recently to study all forms and levels of education in an endeavour to determine how these levels can be adapted to future requirements. It should be noted that a completely new School Act will be presented to the provincial legislature in 1970. Educational television projects have been implemented in various parts of the province. A system of community colleges has been established, and continuing importance is placed on facilities and programs at Alberta's three universities and other post-secondary institutions. Unique in this province is the Alberta Petroleum Industry Training Centre, located in Edmonton, where men are trained to work in Alberta's oil industry; since opening in 1966, the Centre has graduated more than 1,700 students, including some from countries as far away as New Zealand and Algeria.

British Columbia.—Six community colleges have been established in British Columbia since 1965. A study made of Vancouver Community College graduates who continued their education in university showed that, in 1968, 433 entered the University of British Columbia as compared with 166 in 1966. Of the 433 students, more than 33 p.c. entered the faculty of education, another 33 p.c. entered the faculty of arts, 17.5 p.c. chose science and 7 p.c. commerce. English is the basic language of instruction in British Columbia schools but, in one experimental project at the kindergarten and grade one levels, instruction is in French for part of each day and it is planned to project this experiment by one grade each year. As of Sept. 30, 1969, there were 10,247 pupils in special classes, such as those for educatable retarded, blind and deaf children. In most school districts, the less-severely handicapped children receive special instruction in regular schools but those more severely handicapped are taught in special schools under government or private operation.

An academic and occupational high school under construction at Frobisher Bay, Baffin Island, has exterior walls made of fibreglass and urethane foam panels which were easily transported and erected. The school, which inside contains all the facilities of a modern 'southern' school, will accommodate 475 students, eliminating the problems involved in sending them long distances from home.



Yukon Territory.—The Yukon Territory school system is operated through a superintendent and staff at Whitehorse, appointed by the Territorial Government and responsible to the Commissioner of the Territory. The Northern Services Division of the federal Department of Indian Affairs and Northern Development offers advice on education policy to the Minister of the Department and to territorial authorities. All schools, both public and separate (with the exception of Carcross Indian Residential School, which is operated by the Department of Indian Affairs and Northern Development) come under direct ownership and operation of the Yukon Territory Government. Although there is provision in the Yukon Territory for public, separate and Indian schools, most Indian children attend public or separate schools; only 82 of 3,699 attended Indian schools in 1968.

Northwest Territories.—School systems in the Northwest Territories Districts of Mackenzie, Franklin and Keewatin are now operated by the territorial Department of Education rather than by the federal Department of Indian Affairs and Northern Development, as previously; education in the Mackenzie District was officially transferred in April 1969 and in the Franklin and Keewatin Districts in April 1970. Enrolment for the 1968-69 term included 3,969 Eskimos, 1,545 Indians and 3,651 others. Of the total of 9,165 students, 8,055 were enrolled in territorial schools, 1,071 in the Roman Catholic school district at Yellowknife, and 39 in two company schools. Subject to increasing modifications, the schools of the Northwest Territories follow the education curricula of the Province of Alberta.

Elementary and Secondary Education

Enrolment in elementary and secondary schools has been increasing year by year until in 1969-70 there were approximately 5,701,000 pupils. Of these, about 164,000 were enrolled in private schools.

Each September, most Canadian children of age six enter an eight-grade elementary school. At about 14 years of age, nearly 90 p.c. of those who entered grade one enter a regular four- or five-year secondary school. From the graduates at this level, a limited number—about 13 p.c. of those who began school—go on to college or university where rather more than half of them pursue a three- or four-year program leading to a bachelor degree in arts or science and the remainder enrol in various professional courses such as commerce, education, engineering, law, medicine, theology, etc.

The 8–4 plan leading from grade one to university was for many years the basic plan for organizing the curriculum and schools, other than those of Catholic Quebec. This plan, although still followed in some school jurisdictions, has been modified from time to time in various provinces, cities or groups of schools, as it appeared inadequate to meet the demands arising from new aims of education. There are a number of variants to be found at present in Canada: the addition of one or even two kindergarten years at the beginning of the system; the addition of an extra year to high school, providing five rather than four years of secondary schooling; the introduction of junior high schools, changing the organization to a 6–3–3 or 6–3–4 plan; or again, the combining of the first six years of elementary school into two units, each designed to reach certain specified goals during a three-year period. A fairly recent innovation is the establishment of junior colleges, affiliated with universities, in which the last one or two years of high school and the first one or two years of college are offered.

The first secondary schools were predominantly academic and prepared their pupils for entry into university. Until recent years, vocational schools were to be found only in the large cities, although schools in some of the smaller centres did provide a few commercial and technical subjects as options in the academic curriculum. Today, besides commercial and vocational high schools, there are, in increasing number, composite and regional high schools that provide courses in home economics, agriculture, shop-work and commercial subjects as well as in the regular secondary school subjects. The number of subjects

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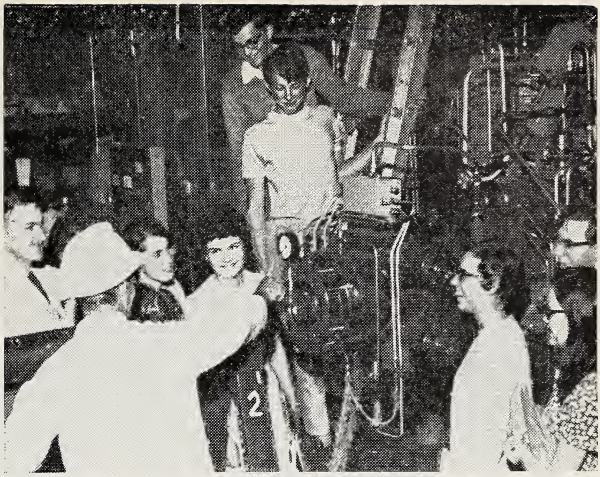

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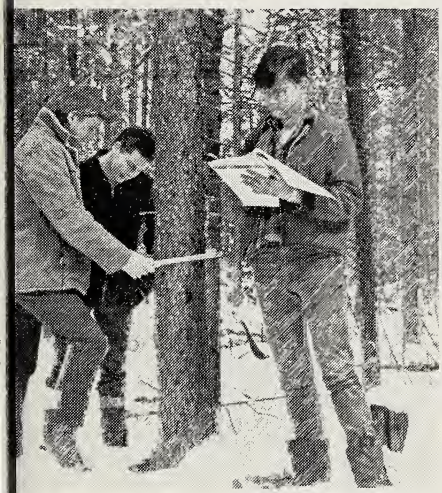

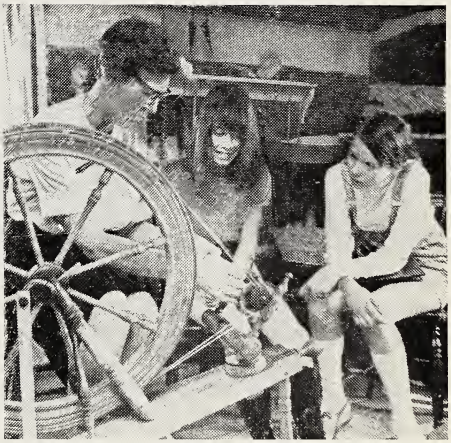

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offered has also increased greatly and the number of options available provides a wi choice for pupils with a great variety of abilities and aims. Three programs can fr quently be distinguished—the university entrance course, the general course for tho who wish to complete an academic type of program before entering employment, ar vocational courses for those who wish to enter skilled trades. Thus, attention is give to the minority who will go on to institutions of higher learning, while the majority, wh will look for jobs, are prepared for entry to their chosen occupation. Considerable emphas has been placed on music, art, physical education, guidance and group activities but n at the expense of the basic subjects that provide a general foundation.

Special Education.—Interest is increasing in the education of exceptional children- those who deviate so far from the normal as to require special educational facilities. Ne types of special classes are sometimes started by parents of children with a common dis bility, who band together to provide help and show the need for such service, which is th taken over by public bodies. Progress in providing such education varies from provin to province. It is most commonly found in the city school systems; in rural areas there usually little provision for the child who needs special attention, except for those who a admitted to residential institutions. There are six schools for the blind, 16 schools for th deaf and a number of training schools for mental defectives. Special classes are found i tuberculosis sanatoria, mental hospitals and reformatories. In many cities, there a classes for the hard-of-hearing, the partly blind and other physically and mentally hand capped children and a few for the highly gifted.

Teachers.—All provinces require candidates for elementary school teacher certificat to have high school completion or better, with at least one year of professional training in faculty of education or a teachers college. The training usually consists of professional a academic courses, and some time spent in practice teaching. High school teachers a generally university graduates who have taken an additional year of professional training i a college of education, or who have graduated with a degree in education. The trend is f the government departments of education to give the universities responsibility for th training of elementary school teachers as well as secondary teachers. In Newfoundlan Prince Edward Island, Manitoba, Saskatchewan, Alberta and British Columbia all teach training is conducted at the university, where three or four different courses leading to degree are provided. About three quarters of the time is devoted to academic cours in arts and science and the remainder to professional courses.

In 1968-69 there were 56 normal schools and teachers colleges, 32 faculties or colleg of education and two institutes of technology engaged in teacher training, with a tot enrolment of 49,698. In the same year there were about 237,000 full-time teachers in th public elementary and secondary schools in Canada and 11,000 in the private school Most teachers in these schools are paid according to a local salary schedule based o years of training and experience; they contribute to a provincial superannuation schem and are members of a provincial professional organization. In 1968-69 about 64 p.c. them were women, of whom a little more than half were married. The median salary of a teachers and principals in the eight provinces other than Quebec and Ontario, for whom adequate data were not available, was $6,495, an increase of 5.2 p.c. over the previous yea Apart from teachers in Quebec and Ontario, about 23 p.c. of those in elementary schoo and 71 p.c. of those in secondary schools had university degrees.

Higher Education

There are distinctive differences in Canadian systems of higher education. Th universities and colleges long ago established by the French were based on the culture o old France and were administered by Roman Catholic groups, either religious or secula These French-language institutions still retain their traditional characteristics but ar now conforming almost entirely to the North American system of administration. Th largest group of universities and colleges in Canada is administered by English-speakin staffs and offers instruction in English. Apart from those founded and still administere

The University of Alberta, situated on the North Saskatchewan River about two miles from Edmonton's business centre, began its 64th university year in the fall of 1970. Some 20 major teaching and research buildings are situated on its 154-acre campus, as well as two affiliated colleges, residence halls, provincial laboratories, teaching and other hospitals, service buildings, etc. Its 700-acre farm and its botanical gardens are located away from the campus.

by various Protestant religious groups, these institutions are mainly non-denominational, having been established through private subscription or by the provincial government concerned. A few universities provide instruction in both English and French. The University of Ottawa has been a bilingual institution since its establishment in 1866. It was originally under Roman Catholic administration but since 1965 has been administered by a non-denominational board of governors. The administrative bodies of the other bilingual universities, more recently established, are entirely Roman Catholic.

Civil legislation regarding the establishment of new institutions or changes in existing ones is usually enacted by provincial legislatures, except for federal military colleges and a few institutions originally established by Act of the Canadian Parliament. Once an institution is legally chartered, control is vested in its governing body, the membership of which is indicated in the charter. The line of authority runs from the board of governors through the president (or *recteur*) to the senate and deans and the faculty as a whole.

The composition of the board of governors varies according to the type of institution. Provincial universities normally have government representation; church-related institutions have clergymen. Nearly all boards have either direct representation from the business community, alumni associations and other organizations, or are advised by these groups through advisory boards or committees. A recent phenomenon has been the inclusion of students on administrative bodies. The size of the board varies from a very few to over sixty. It has ultimate control of the university and normally reserves to itself complete financial powers, including the appointment of the president and most other staff. On occasion there will be faculty representation on the board and recently there have been

attempts on the part of faculty groups of many institutions to obtain greater representation on the boards of governors. Responsibility for academic affairs is usually delegated to the senate. Composed mainly of faculty members, although there may also be alumni and representatives of non-academic groups included, the board is responsible for admission, courses, discipline and the awarding of degrees.

Although there are variations, most students enter a university after the completion of from 11 to 13 years of elementary and secondary schooling. Courses of instruction ranging from a period of three to five years lead to a bachelor's degree in arts, pure science and such professional fields as engineering, business administration, agriculture and education. Courses in law, theology, dentistry, medicine and some other fields are longer—usually requiring for admission completion of part or all of a first-degree course in arts or science. For those pursuing graduate studies and research, the second degree is normally the master's or *licence*—at least one year beyond the first degree—and the third is the doctorate, normally requiring at least two additional years beyond the second degree.

In 1968-69 there were 78 degree-granting institutions, 23 of which conferred, almost exclusively, theology degrees. In addition, there were approximately 150 institutions offering university-level courses but not conferring degrees. Full-time university-grade enrolment in the fall of 1968 was 270,093, a 3.4-p.c. increase over the previous year. The tremendous increase in demand for university places in recent years has resulted in a rapidly intensifying crisis in the financing of higher education, and a commission under the chairmanship of Dean Vincent Bladen of the University of Toronto was set up in 1963 by the then Canadian Universities Foundation (now the Association of Universities and Colleges of Canada) to study the financing of higher education in Canada. The Commission presented its report in the fall of 1965; among its recommendations were many referring to increased federal support for the universities.

In addition to the full-time university-grade enrolment, almost as many students are enrolled at the pre-matriculation level or are taking university-grade courses on a part-time basis, either in the evenings, during summer session or by correspondence. The numbers of graduates in most faculties for the academic years ended in 1967 to 1969 are given in Table **10**, p. 437.

Trade and Technical Education and Training

Increasing use of automated processes in business and industry is resulting in a shrinking market for unskilled and semi-skilled workers. Early school dropouts are finding it increasingly difficult to get suitable employment and many are now trying to acquire in their adult years the general education or training in the skilled trades that they missed in their youth. Those persons still in the regular school system are tending to remain longer and go farther in the system, partly because of the changing attitudes of society toward education and partly for economic reasons.

Hand in hand with this growing demand for better educational facilities, educators are striving to provide comprehensive programs at all levels to meet the needs not only of the university-bound but also of the great majority who require adequate preparation for early entry into the labour force. It is now accepted that vocational education for adults as well as for youths is a public responsibility which must be provided, as needed, throughout the person's working life. Education of this nature is of national concern and has a direct impact upon material prosperity, the economy and the standard of living.

The pattern of vocational education in Canada varies from province to province and there are variations within the provinces. However, there are three basic types of institutes offering vocational education—secondary schools, trade and occupational training schools and post-secondary institutes of technology. Many municipal school boards provide vocational courses as part of the regular secondary school program in technical or composite-type schools. Students in these schools get some general vocational training or training in certain specific fields, such as typing or auto-mechanics, along with instruction in general academic or cultural subjects.

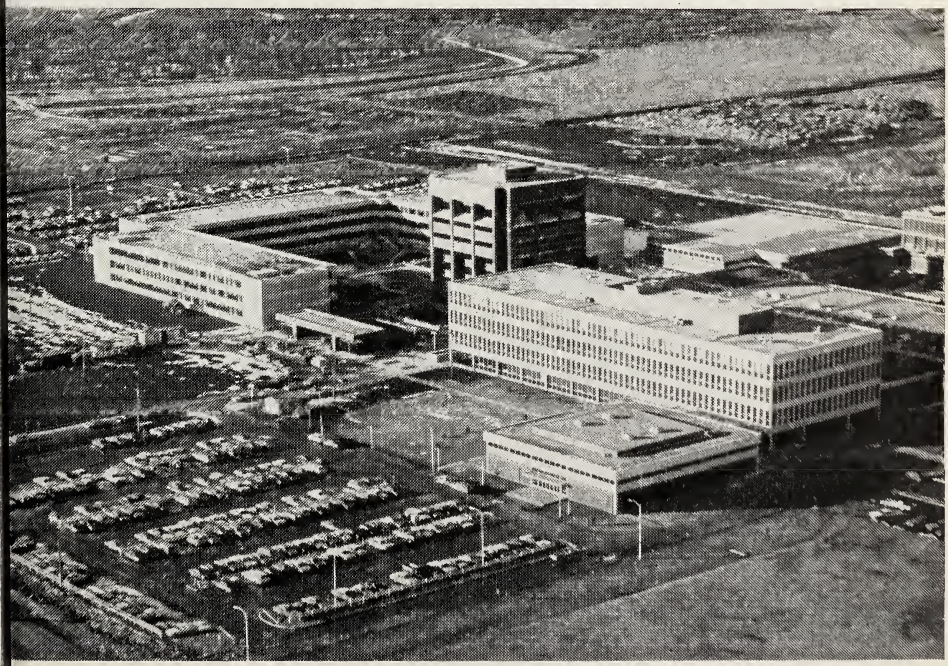
Trade and occupational training schools, on the other hand, are open only to those ho have passed the provincial school-leaving age and have left the regular school system. hese schools offer specialized training and their purpose is to develop competent people r a wide variety of occupations. Courses at the trade level do not usually require high hool graduation; the grade level demanded, which varies according to province or trade, nges from grade eight to grade 12.

The third type, the institutes of technology, operate at a higher level of training. nrolment in the institutes presupposes high school graduation or at least high school anding in such relevant subjects as mathematics and the sciences. Graduates from stitutes of technology are awarded diplomas of applied arts or diplomas of technology, id form an essential link between the professionals on the one hand and qualified crafts- en on the other. Most of the institutes of technology and trade schools across Canada e provincially operated.

In addition to the vocational education and training provided by these three types of ublicly operated schools, many private business colleges and trade schools offer a wide ariety of business, trade and technical courses, some through correspondence. Vocational ducation is also carried out under a system of apprenticeship training. Such training given mainly on the job, with classes taken at the trade schools either during the evening on a full-time basis during the day for periods ranging from three to 10 weeks a year.

Under the Adult Occupational Training Act, the Federal Government takes full sponsibility for financing the cost of training adults who are or should be in the labour rce. The cost of providing primary, secondary and post-secondary education remains

The Red River Community College in Winnipeg is one of the largest and most up-to-date vocational-academic complexes in Canada, having an enrolment capacity of 5,000 at any one time. The newly completed applied arts building is on the left and the technology building on the right. The administrative offices are in the central structure.



a provincial responsibility. If, in the opinion of a Manpower Counsellor, it is in the be interest of the individual and of the economy for an adult to undertake training or r training, it will be purchased by the Federal Government from a public or private trainin institution or from industry.

The program also provides for the payment of allowances to persons who have adu economic responsibilities to enable them to take training but it intentionally avoids th payment of such allowances to youth whose education should normally be provided by th province. Adult trainees who have been three years in the labour force, which include periods during which employment was being sought, or those who have dependants, a paid these allowances, which range from $40 to $103 per week.

The federal-provincial Capital Assistance Program begun under a former agreemen has been extended for the benefit of the provinces that were not able to take full advantag of the previous program. This allows for a continued expansion of facilities to carry ou a variety of vocational programs. During the period Apr. 1, 1961 to Mar. 31, 1970, projec valued at nearly $2,162,000,000 were approved which, when all completed, will provide total of nearly 600,000 new places for students.

How Education Costs are Met

In 1967 about 10 p.c. of Canada's total national income was spent on formal educatio Over 20 p.c. of all municipal, provincial and federal revenue went for education and, the amount so spent, the municipalities provided 26 p.c. and the provinces 52 p.c.

As stated on p. 418, the actual operation of public elementary and secondary schools in the hands of the local elected or appointed school boards which determine the budget and therefore the amount of taxes required for school purposes. In most cases, these taxe are levied and collected for the boards by the municipalities; however, in those areas wher there is no municipal organization the school boards have the power to levy and collec taxes for school purposes. At present, local governments provide 47 p.c. of the cost operating the public schools, provincial grants provide 51 p.c. and the remainder is obtaine from various other sources. Except in Newfoundland, fees are almost non-existen Four provinces—British Columbia, Alberta, Manitoba and Nova Scotia—pay operatin grants on an equalization formula and thus ensure at least a minimum level of educatio throughout the province; the standard is determined either in terms of so much per pupi or from an established salary scale for teachers with a prescribed teacher-pupil ratio, o by some combination of these.

In Newfoundland where municipal organization scarcely exists outside certain large centres, there are three school-tax areas. Consequently, only about 2.0 p.c. of scho revenue is provided by local taxation; the province provides about 90 p.c. and most o the remainder is paid by parents in the form of fees. In Prince Edward Island wher there is no municipal organization outside of the cities of Charlottetown and Summerside the school boards levy and collect property and poll taxes but the province provides abou two thirds of the operating costs. Ontario and Saskatchewan make use of various equaliza tion and incentive grants. On Jan. 1, 1967, the New Brunswick Government introduce a Program of Equal Opportunity under which it assumed full responsibility for publi education and other social services. Consequently, in the following year, 98 p.c. of th revenue used for public education was derived from provincial taxes (real property and sale taxes); the remaining 2 p.c. came from miscellaneous sources. Most provinces provid grants for school buildings and assist in selling them.

In 1967-68, universities and colleges received 70 p.c. of their current operating fund from provincial governments and the Federal Government, 20 p.c. from fees, 1.4 p.c. fro endowments and 8.6 p.c. from other sources. Private schools and colleges are normall supported by student fees, endowment income, gifts, and income from sponsoring bodie

ederal Contributions to Education

Some 60 Federal Government departments and agencies contribute to education in e way or another. As stated on p. 413, the Federal Government has no responsibility for e organization and administration of education. It has, however, a vital interest in e general level of education and skills of the population and the extent of the scientific search carried on in Canada, realizing the profound effect these factors exercise upon the velopment of the national economy.

Beginning with the 1967-68 fiscal year, the federal support to education underwent a gnificant change. The total federal contribution to education was increased substan- lly but the form of this support and the method of its distribution were altered in certain y areas. There were three important changes. (1) Operating grants to universities and lleges computed in the past at so many dollars per capita of provincial population (approxi- ately $5) were discontinued and the program replaced by a broader program of financial pport to post-secondary education more advantageous to the provinces (explained more lly below). (2) On Mar. 31, 1967, the federal-provincial agreements concluded under e terms of the Technical and Vocational Training Act of 1961 were allowed to expire, cept that the agreement for the training of the unemployed was extended to July 1, 1968 d the agreement on financing capital projects was maintained until each province would ve received the increased maximum federal contribution stipulated by law. The Federal overnment now pays the full cost of vocational training of adults, including living allow- ces, under the Adult Occupational Training Act (SC 1967, c. 94). (3) The Federal overnment announced, in general terms, its willingness to increase grants for specific search projects undertaken by individual professors and other researchers at universities.

In 1968-69, the Federal Government spent $319,640,000 on vocational training, cluding the vocational high schools. Of this total, almost $213,690,000 was spent on aining costs and allowances under the Adult Occupational Training Act, and $3,000,000 as spent under the old federal-provincial agreements, most of it for the training of the employed. Expenditures on capital projects amounted to $105,950,000, including nstruction costs and equipment for vocational high schools. During the same year, ants for specific research projects in universities amounted to $86,435,000, about 24 p.c. ore than in the previous year. The combined federal expenditures on these two programs hounted to $406,075,000, an increase of about 7 p.c. over 1967-68.

As a result of the federal-provincial conference of October 1966, the Federal Govern- ent undertook to provide increased support to education. Recognizing that education is rovincial responsibility, it decided to discontinue payment of operating grants directly to iversities, and to expand its support beyond university education and include in its ogram all, or almost all, post-secondary education, i.e., the educational institutions d courses requiring for admission at least junior matriculation, or its equivalent, in each ovince. The provinces were offered the choice of either a federal grant amounting $15 per head of population, or 50 p.c. of operating costs of post-secondary education, hichever was greater. Implementing this proposal, Parliament passed, in March 1967, e Federal-Provincial Fiscal Arrangements Act, 1967, under the terms of which certain rcentages of federal revenues plus required cash were to be transferred by the federal easury to the provinces commencing with the 1967-68 fiscal year, and to continue for five ars. The financial resources transferred to the provinces for 1967-68 are estimated at 00,600,000, those for 1968-69 at over $500,000,000 and those for 1969-70 at about 20,000,000.

Under the Canada Student Loans Act (SC 1964, c. 24), full-time students may borrow to $1,000 annually, interest-free for five years—the $5,000 or less to be repaid with

interest commencing six months after the student has graduated. Provision is mad for the allocated amount to be increased year by year in proportion to the number o persons 18-24 years of age in the population. The purpose of the loan plan is to assis those students who, for financial reasons, would otherwise be prevented from getting post-secondary education or would not be able to devote full time to their studies. Thes loans may be made only on the basis of certificates of eligibility issued by the participatin province through the university or institute of technology concerned. There is no uppe or lower age limit for eligibility. The loan scheme is operated by the chartered banks, th Federal Government guaranteeing the loans and paying the interest while the student i attending college. All provinces except Quebec participate; Quebec offers its own studen assistance program for the benefit of Quebec residents.

The Act provides for basic allocations for each province and also for supplementar allocations to compensate for differences in relative demand as between provinces, base on provincial population in the 18–24-year age group. The basic allocations for the yea 1968-69 for participating provinces totalled $55,120,000 with authority for discretionar allocations up to $12,208,000, making a total maximum of $67,328,000 authorized unde the Act. Loans actually authorized amounted to $62,576,000. In addition, federal pay ments to lending institutions in respect of interest on outstanding loans and other opera tional expenses amounted to $9,377,000.

Under the Adult Occupational Training Act (SC 1967, c. 94), the Minister of Manpowe and Immigration may enter into agreements with provinces to provide for federal contribu tions in respect of the capital expenditures incurred by the provinces on occupationa training facilities, including vocational high schools, technical institutes, trade and occu pational centres. Federal contributions amount to 75 p.c. of the cost of approved project up to a maximum of $480 per head of the "youth population of the province in 1961", i.e. in the age group 15–19 years. Beyond that limit, federal contributions amount to 50 p.c for up to an additional amount of $320 per capita of the youth population. All federa contributions made to the provinces since Apr. 1, 1961, under the terms of the "forme agreement" are included in determining the level and limit of the federal contributions i respect of capital projects. There is no time limit stipulated for this program.

The estimated value of all provincial projects approved by the federal authorities during the period Apr. 1, 1961 to Mar. 31, 1969, amounted to over $1,950,000,000, th federal contribution being almost $1,029,000,000 when all projects are completed. In th same period, the actual cash payments made by the federal treasury to the province amounted to $812,427,000.

In 1966, the Federal Government inaugurated another program of massive financia support to the provinces for the purpose of providing badly needed facilities for training professional personnel in health services, to be administered by the Department of Nationa Health and Welfare. The Health Resources Fund Act (SC 1966-67, c. 42) provides for th establishment of a fund to assist financially in the planning, acquisition, construction, reno vation and equipping of health training facilities, defined to mean any school, hospital o other institution for the training of persons in the health professions or any occupation associated with the health professions, or for the conducting of research in the health field but excluding any residential accommodation. The Fund was established by the Act i the amount of $500,000,000 to be applied to costs incurred between Jan. 1, 1966 and Dec. 31 1980; of that amount, $300,000,000 was allocated to the provinces on a per capita basis $25,000,000 was allocated to the four Atlantic Provinces for joint projects, and $175,000,00 remained to be allocated by the Governor in Council. Contributions are payable to th provinces in amounts of up to 50 p.c. of the costs of the projects approved by the Minister'

Advisory Committee as part of a five-year plan for the development of health training facilities in a province.

During the three years of operation of this program, 1966-67 to 1968-69, the Federal Government paid $71,273,000 to the provincial treasuries in respect of approved projects. Most of the projects financed in the first year of the program involved training facilities in universities or institutions connected with, or operated by schools of medicine. However, in 1967-68 and even more so in 1968-69 several projects not connected with universities were financed, such as schools of nursing, including new regional schools of nursing in Ontario, and schools for nursing assistants. In addition to higher education, post-secondary and vocational types of training are beginning to benefit from this program.

The Federal Government through the Canada Council in 1957 provided an amount of $100,000,000, half of which was to be distributed among the universities for specified building and equipment purposes, similar to the distribution of grants. Interest from the remaining $50,000,000 was to be used to assist in the development of the arts, humanities and social sciences, mainly through scholarships (see pp. 452-453).

Other contributions are more indirect and include scholarships, research grants and reports or services of value to the schools. Research grants are made by the National Research Council, the Defence Research Board, the Department of National Health and Welfare, the Department of Manpower and Immigration and other agencies. Some Departments, such as Agriculture, Health and Welfare, etc., provide materials and publications of value in the school programs, and the National Museums of Canada, including the National Gallery, the National Film Board and the Canadian Broadcasting Corporation contribute directly or indirectly to various school programs.

More directly, the Federal Government is responsible for the education of Indians on reserves, prisoners in penitentiaries, members of the Armed Services and their dependants and in-service training for permanent personnel. It also assists in citizenship training and other out-of-school informal education activities.

External Educational Assistance

The Canadian International Development Agency is responsible for the operation and administration of the technical assistance program offered by the Canadian Government to developing countries. On June 30, 1970, there were 767 educators working in developing countries under the auspices of CIDA, including teachers, teacher trainers and university staff members working individually or in teams; also in the field were 232 advisers in such areas as health and welfare, engineering, administration and vocational education. On the same date, 1,456 students from developing countries were receiving training in Canada, studying in such fields as agriculture, teacher training, health and natural resources.

During the year ended Mar. 31, 1969, Canada's expenditures abroad on capital projects and technical assistance in aid of education amounted to about $27,731,900. Capital assistance includes the building and equipping of technical institutions and major projects include six university centres being constructed on the Leeward and Windward Islands as part of the expansion program of the University of the West Indies. The project is part of the five-year, $5,000,000 program of Canadian assistance to that University begun in 1966. Besides financing the construction of new buildings, it provides scholarships and fellowships for training at UWI and in Canada, as well as Canadian lecturers and professors for the university.

In 1969, CIDA delegated the administration of the Commonwealth Scholarship and Fellowship Plan to the Association of Universities and Colleges of Canada. In August 1970, there were 201 students in Canada under this Plan.

Section 3.—Statistics of Schools, Universities and Colleges

Elementary and secondary schools may be classified as either publicly controlled or private. The publicly controlled schools include: the public and separate schools under local school boards—by far the most numerous group; provincial schools which at this level are limited mainly to trade schools, correspondence courses, and special schools for the blind and deaf; and federal schools for Indians and for the children of members of the Armed Forces overseas. Private schools may be academic, business (commercial), trade, technical, correspondence or even a combination of these.

Institutions of higher education may be provincial, church, independent universities and colleges, or federal military colleges. In addition there are community colleges, teachers colleges, theological institutions and schools for such specialized fields as nursing, agriculture, paper-making, fisheries, textiles, graphic and fine arts, languages, etc. Some of these are provincial and some private.

Table 1 shows full-time enrolment at all levels each year for the period 1960-61 to 1969-70 and Table 2 shows the number of schools, teachers and pupils for all types of education institutions, classified by province, for the school year 1968-69. In all types of schools the number of pupils has increased each year over that period. The increase was first noticed at the elementary level some six years after the birth rate began to rise during the war years. About eight years later the children born during the War were entering high school and four years later they began entering university. The number of teachers is rather closely related to the number of students although the trend is toward larger classes. In contrast, the number of schools remains almost unchanged because the addition of new and larger schools constructed in urban areas has been balanced by the closing of almost all one-room country schoolhouses.

1.—Full-Time Enrolment in Schools, Colleges and Universities, by Level, School Years 1960-61 to 1969-70

School Year	Elementary and Secondary Schools (Public, Private and Federal)			Post-Secondary			Grand Total Enrolment
	Elementary Grades	Secondary Grades	Total	Non-university[1]	University	Total	
	'000	'000	'000	'000	'000	'000	'000
1960-61	3,413.0	789.2	4,202.1	51.5	113.9	165.4	4,367.5
1961-62	3,515.2	893.5	4,408.7	64.7	128.9	193.6	4,602.3
1962-63	3,604.8	983.2	4,588.0	70.5	141.4	211.9	4,799.9
1963-64	3,709.1	1,068.1	4,777.2	74.1	158.4	232.5	5,009.7
1964-65	3,818.2	1,149.6	4,967.8	74.0	178.2	252.2	5,220.0
1965-66	3,914.2	1,203.6	5,117.8	84.3	205.9	290.2	5,408.0
1966-67	4,013.5	1,254.6	5,268.1	94.0	232.7	326.7	5,594.8
1967-68	4,127.5	1,324.7	5,452.2	111.2	261.2	372.4	5,824.6
1968-69	4,150.4	1,428.0	5,578.4	151.9	270.1[2]	422.0	6,000.4
1969-70	4,194.8	1,505.9	5,700.7	181.5	297.9[2]	479.4	6,180.1

[1] Includes enrolments in teachers colleges, diploma schools of nursing and other non-university institutions; enrolments for Quebec are estimated. [2] Enrolments for Quebec and British Columbia are estimated.

An attempt has been made to tabulate total expenditure on education, including formal education at all levels, vocational training of all types and also expenditure on cultural activities related to education such as adult night classes, fine arts and handcraft courses, and libraries, museums and art galleries. Such expenditure for the year 1967 is presented in Table 3, classified by source. Details of income of school boards for publicly controlled elementary and secondary schools for the years 1965-67 are given at pp. 434-435 and financial statistics for universities and colleges at pp. 438-439.

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Elementary and Secondary Education[1]												
Public and Separate—												
Schools	1,046	320	803	805	4,100[2]	5,296	941	1,119	1,226	1,416	88	17,160
Teachers	5,855	1,397	8,487	7,252	73,000[2]	79,300	9,926	11,109	17,492	18,272	642	232,732
Pupils	151,976	29,217	204,607	169,703	1,460,000[2]	1,868,788	231,650	245,526	385,972	468,659	12,056	5,228,154
Indian[3]												
Schools	—	1	5	7	26	82	58	63	30	68	1	341
Teachers	—	2	24	28	155	278	254	225	179	205	4	1,354
Pupils	—	53	649	682	3,625	6,752	6,225	5,025	3,668	5,028	93	31,800
Blind—												
Schools	—	—	1	—	3	1	—	—	—	1	—	6
Teachers	—	—	29	—	56	39	—	—	—	18	—	142
Pupils (home province)	33	6	78	35	257	206	18	21	31	79	1	765
Deaf—												
Schools	1	1	1	—	5	2	2	1	1	1	—	15
Teachers	21	4	56	—	177	153	27	27	23	30	—	518
Pupils (home province)	126	18	180	124	1,008	854	179	162	115	234	11	3,011
Private—												
Schools	3	1	17	7	780[2]	238	52	15	34	142	—	1,289
Teachers	26	11	199	60	6,350[2]	3,365	583	159	313	1,273	—	12,339
Pupils	230	140	3,255	468	95,375[2]	42,986	9,708	1,987	5,614	24,160	—	183,923
Higher Education—												
Institutions[4]	1	2	14	4	14	40	12	15	14	13	—	129
Students (full-time university grade)	4,473	1,369	10,501	7,927	82,610	79,089	13,426	12,697	19,688	29,427	—	261,207
Teacher Training—												
Teachers Colleges—												
Institutions	—	—	1	1	54	13	—	—	—	—	—	69
Teachers (full-time)	—	—	41	57	915	489	—	—	—	—	—	1,502
Students (full-time)	—	—	655	1,141	14,740	6,853	—	—	—	—	—	23,389
Faculties of Education—												
Faculties	1	2	5	3	5	3	2	2	3	4	—	30
Teachers (full-time)	39	8	31	25	179	141	73	97	206	239	—	1,038
Students (full-time)[5]	1,975	119	453	434	2,403	1,329	1,084	3,198	5,619	4,743	—	21,357
Vocational Education[6]												
Public Trade Schools and Vocational Centres—												
Institutions[7]	15	4	15	11	..	23	3	4	17	11	1[8]	104
Students	5,521	1,494	10,142	8,078	..	71,784	7,846	5,494	6,400	17,196	435	134,390
High Schools—												
Schools offering vocational programs	3[9]	7	50	54	..	463	65	17	64	137	6	866
Students	..	921	2,150	10,553	..	231,763	7,935	4,735	19,648	22,763	554	301,022

For footnotes, see end of table, p. 430.

2.—Schools, Teachers and Enrolment for All Types of Education Institutions, by Province, School Year 1968-69—concluded

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Vocational Education—concluded												
Post-secondary Schools—												
Institutions	2	—	5	2	..	32	4	2	10	5	—	62
Teachers	89	—	90	78	..	2,494	103	113	680	318	—	3,965
Students	713	—	913	467	14,010	27,004	1,224	1,145	6,420	3,265	—	55,161
Diploma Schools of Nursing—												
Institutions	3	3	13	11	63	75	7	12	15	7	—	209
Teachers	29	20	123	101	616	1,058	123	117	207	133	—	2,527
Students	649	186	953	978	6,728	9,460	1,246	1,164	2,114	1,622	—	25,100
Nursing Assistant Schools—												
Institutions	6	1	6	5	20	55	5	1	2	6	—	107
Students	460	31	265	152	717	2,250	283	198	605	450	—	5,411
Private Trade Schools—												
Institutions	1	—	12	7	..	82	13	8	38	47	—	208
Teachers (full- and part-time)	..	—	35[10]	20	..	527	36	33	132	144	—	927
Students (full- and part-time)	..	—	298[10]	306	..	7,307	586	504	1,200	2,947	—	13,148[11]
Private Business Colleges—												
Institutions	1	1	5	4	..	35	6	7	7	10	—	76
Teachers (full- and part-time)	..	..	32[12]	21	..	152	41	51	28	45	—	370
Students (full- and part-time)	..	..	675[12]	779	..	6,645	2,435	1,605	1,621	2,300	—	16,060[13]
Correspondence Education												
Enrolment—												
Provincial government schools	22	75	1,376	3,077	3,152	35,174[14]	2,783	5,840	19,315	17,140	8	87,962
Institutes of technology	—	—	[15]	—	—	304	—	—	1,505	—	—	1,809
Universities	—	—	124	325	267	13,071	481	1,153	—	627	—	16,048
Private schools[16]	—	—	—	—	1,021	2,472	—	—	236	846	—	4,575
Associations	—	—	—	—	370	10,837	—	31	—	—	—	11,238[17]

[1] In addition to the schools listed, there were 18 National Defence schools overseas, with 8,303 pupils and 490 teachers. [2] Estimate. [3] Day, residential and hospital schools administered by the Federal Government. [4] Includes affiliated colleges and schools of post-matriculation. [5] Also included with "Higher Education". [6] Numbers of teachers are not available for some categories. [7] Excludes adult vocational centres set up temporarily in connection with special programs. [8] Northwest Territories residents are trained in establishments outside the Territories. [9] With commercial course only. [10] Includes one school in Newfoundland. [11] In addition, there were 24,917 students in correspondence courses. [12] Includes one school in Newfoundland and one in Prince Edward Island. [13] In addition, there were 572 students in correspondence courses. [14] 1966-67. [15] Included in "Provincial Government Schools". [16] Includes 14 private schools operated in Canada, but does not include 16,182 students reported by five private schools where marking is done at the parent school located in the United States. Duplicated under "Vocational Education". [17] Includes 8,700 students duplicated under "Universities".

3.—Expenditure on Formal Education, Vocational Training and Related Cultural Activities, by Source of Funds, 1967

Type of Education	Local Taxation	Provincial and Territorial Governments	Federal Government	Fees	Other Sources	Total Expenditure
	$'000	$'000	$'000	$'000	$'000	$'000
Formal Education—						
Elementary and Secondary—						
Public schools	1,263,706	1,554,101	111,680	13,719	49,910	2,993,116
Handicapped outside the public schools	165	24,044	—	232	315	24,756
Government correspondence schools	—	3,177	—	335	81	3,593
Reform schools	—	3,300	—	—	—	3,300
Indian and Eskimo education	—	—	66,973	—	—	66,973
Private schools	—	16,898	—	50,506	30,847	98,251
Totals, Elementary and Secondary	1,263,871	1,601,520	178,653	64,792	81,153	3,189,989
Teacher training outside universities	—	30,766	10	1,571	23	32,370
Post-secondary Education—						
Current operating expenditures	258	50,191	5,696	6,972	2,904	66,021
Capital immobilizations	7	44,725	16,389	—	2,061	63,182
Scholarships	—	—	184	—	—	184
Higher Education (Universities and Colleges)—						
Current operating expenditures	1,806	434,673	2,510	144,554	55,642	639,185
Plant expenditure from current funds	1,334	236,621	33,437	—	110,275	381,667
University research	6	11,134	69,742	—	17,666	98,548
Defence colleges	—	—	10,760	—	—	10,760
Scholarships	—	43,559	41,476	—	2,176	87,211
Other	—	14,376	1,520	—	4	15,900
Totals, Higher Education	3,146	740,363	159,445	144,554	185,763	1,233,271
Undistributable expenditure	—	—	25,680	—	—	25,680
Totals, Formal Education	**1,267,282**	**2,467,565**	**386,057**	**217,889**	**271,904**	**4,610,697**
Occupational Training—						
Public	—	62,074	77,048	3,117	2,435	144,674
Industry (private)	—	827	722	—	6	1,555
Apprenticeship	—	1,625	9,079	796	599	12,099
Allowances	—	6,991	91,843	—	94	98,928
Reformatories and penitentiaries	—	1,628	1,201	—	—	2,829
Other occupational training	—	3,063	27,629	2	706	31,400
Capital expenditures	—	21,047	20,866	—	—	41,913
Private business colleges	—	—	—	4,497	403	4,900
Totals, Occupational Training	—	**97,255**	**228,388**	**8,412**	**4,243**	**338,298**
Totals, Formal Education and Occupational Training	**1,267,282**	**2,564,820**	**614,445**	**226,301**	**276,147**	**4,948,995**
Cultural Activities—[1]						
Adult education, including night schools	—	1,670	836	16	4	2,526
Fine arts	—	5,982	27,048	11	—	33,041
Handcrafts	—	207	—	4	—	211
Libraries[2]	33,203	12,718	4,832	—	5,058	55,811
Archives, museums and art galleries	—	21,199	6,742	55	69	28,065
National Film Board productions	—	—	10,809	—	—	10,809
Cultural societies—grants	—	10,246	216	22	446	10,930
UNESCO—grant	—	4	962	—	—	966
Other cultural expenditures	—	—	456	—	—	456
Totals, Cultural Activities	**33,203**	**52,026**	**51,901**	**108**	**5,577**	**142,815**

[1] Limited to reported expenditures of public funds.

[2] Includes capital costs from current funds.

Subsection 1.—Elementary and Secondary Schools

Control.—As stated on pp. 414-415, direct control and operation of public schools by school boards, which operate under school laws and regulations. School boards may boards of larger units, local boards within larger units or independent boards for rur schools, towns or cities, the members of which may be all elected, partly elected and part appointed or all appointed; some schools are operated by trustees appointed by the pro ince in lieu of a board. As their designations imply, private schools are administered b private organizations and federal schools by federal authorities.

Table 4 gives the number of active independent public school boards and scho trustees in each province as at January 1969.

4.—Active Public School Boards and School Trustees, by Province, as at January 1969

Province or District	Independent School Boards	School Boards Composed of Trustees who are—			School Trustee
		All Elected	Some Appointed Some Elected	All Appointed	
	No.	No.	No.	No.	No.
Newfoundland	197	—	—	197	3,00
Prince Edward Island	337	319	16	2	1,22
Nova Scotia	76	—	—	76	46
New Brunswick	33	—	33	—	44
Quebec—					
Roman Catholic	1,193[2]	1,191[2]	—	2	..
Protestant	222[2]	221[2]	—	1	..
Ontario	235	235	—	—	2,10
Manitoba	157	157	—	—	84
Saskatchewan	128	128	—	—	68
Alberta	201	201	—	—	91
British Columbia	83	83	—	—	54
Mackenzie District	3	3	—	—	1
Totals	**2,865**	**2,538**	**49**	**278**	..

[1] Estimate. [2] Includes a central board which administers both Roman Catholic and Protestant schoo

Enrolment.—Table 5 shows enrolment of all elementary and secondary pupils Canada and in Department of National Defence schools overseas, and classifies them b grade. Private schools and schools for Indian and Eskimo children are included in the figures. Enrolment in private schools accounted for 3.4 p.c. of the total 1967-68 enrolme at the elementary and secondary levels. Schools operated by Federal Government depar ments, that is, schools for Indian children, schools in the Territories (now under Territori administration) and overseas schools for children of Service personnel, accounted for abo 0.9 p.c. of the total.

School enrolment has been increasing in recent years much more rapidly than t general population. Total school enrolment in 1967-68 represented a 3.4-p.c. increa over the previous year. In comparison, the annual rates of increase in total school enr ment for the three previous years ranged from 3.1 p.c. to 4.1 p.c.; the country's populati during the same period increased annually by percentages which varied from 1.7 p.c. 1.8 p.c.

5.—Enrolment in Publicly Controlled, Private and Federal Schools, by Grade, School Year 1968-69

Grade	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec[1]	Ontario
	No.	No.	No.	No.	No.	No.
ndergarten	12,231	77	17,836	233	121,203	161,709
ade 1	15,083	3,041	18,340	16,174	135,207	172,938
ade 2	14,935	2,813	18,507	16,239	94,628	166,488
ade 3	15,098	2,601	18,481	16,351	145,254	163,699
ade 4	14,952	2,642	18,187	15,748	143,916	160,407
ade 5	14,755	2,594	17,847	16,289	140,595	158,180
ade 6	14,127	2,538	17,506	16,344	139,168	155,366
ade 7	14,670	2,653	19,055	16,531	131,721	152,209
ade 8	13,011	2,643	17,777	15,223	137,500	144,008
ade 9	12,011	2,434	16,070	13,788	126,600	147,376
ade 10	9,911	1,948	13,607	12,274	115,000	132,737
ade 11	8,762	1,675	11,717	10,007	100,000	113,605
ade 12	60	1,461	8,112	8,336	..	98,161
ade 13	...	...	...	73	...	48,219
xiliary	809	454	1,727	985	55,015	28,333
ecial	235	175	993	255	5,700	32,973
Totals	**160,650**	**29,749**	**215,762**	**174,850**	**1,591,507**	**2,036,408**

Grade	Manitoba	Saskatchewan	Alberta	British Columbia	Y.T. and N.W.T.	DND Schools Overseas	Canada
	No.	No.	No.	No.	No.	No.	No.
ndergarten	16,253	4,788	931	21,736	791	973	358,761
ade 1	22,925	24,386	40,561	47,378	2,103	985	499,121
ade 2	21,888	22,408	38,716	45,620	1,724	969	444,935
ade 3	21,796	22,350	38,267	45,130	1,479	836	491,342
ade 4	21,269	21,994	37,823	45,387	1,442	725	484,492
ade 5	21,074	21,740	37,332	44,722	1,233	688	477,049
ade 6	20,004	20,986	36,103	43,445	1,045	632	467,264
ade 7	20,378	21,549	35,398	42,124	826	529	457,643
ade 8	19,101	20,666	33,964	41,614	745	491	446,743
ade 9	19,399	20,827	33,051	40,175	559	377	432,667
ade 10	18,263	19,414	31,150	37,213	433	267	392,217
ade 11	16,215	16,160	26,958	33,097	350	205	338,751
ade 12	14,047	15,012	27,949	28,451	236	132	201,957
ade 13	...	...	...	1,146	...	94	49,532
xiliary	4,165	1,966	2,324	6,877	21	13	102,689
ecial	2,903	953	2,087	4,674	268	—	51,216
Totals	**259,680**	**255,199**	**422,614**	**528,789**	**13,255**	**7,916**	**5,696,379**

[1] Estimate.

Teaching Staffs.—Between the school years 1948-49 and 1968-69, the number of achers in the publicly controlled schools of the ten provinces increased from 81,889 to 36,467, or by 189 p.c.; the number of men teachers increased by 304 p.c. and the number of omen teachers by 148 p.c.

After moderate increases from 1948 to 1960, median experience of teachers declined r the following six years, a trend attributable to the large number of new teachers entering he profession. Because most of these new teachers have been employed in the cities, edian experience there has declined rapidly from a high in 1946 of 16.4 years in eight rovinces (excluding Quebec and Newfoundland) to a low in 1967 of 6.0 years in nine rovinces (excluding Quebec). The median experience of all teachers did not show such a ronounced decline, ranging between 6.9 and 8.3 years up to 1960 and then declining to a ew low of 6.6 years for nine provinces (excluding Quebec) in 1967.

The median salary in 1968-69 for all teachers (excluding Quebec and Ontario) wa $6,495, representing an increase of 250 p.c. over the median salary in 1948-49 of $1,855 The rate of increase from one year to the next has fluctuated considerably, ranging fron 2.4 p.c. between the school years ended in 1962 and 1963 to 17.2 p.c. between 1967 and 1968

6.—Teachers and Principals in Publicly Controlled Elementary and Secondary Schools, School Year 1968-69

Province	Number		Median Salary		Median Experience		University Graduates	
	Male	Female	Male	Female	Male	Female	Male	Female
	Teaching Elementary Grades[1]							
			$	$	yrs.	yrs.	p.c.	p.c.
Newfoundland	1,206	3,499	5,112	4,325	4.2	4.8	22.4	7.7
Prince Edward Island	120	936	4,567	3,826	5.3	9.2	26.7	3.8
Nova Scotia	926	5,292	6,541	4,523	6.2	11.2	55.7	18.7
New Brunswick	799	4,421	5,413	4,393	4.4	8.7	38.8	9.7
Quebec	..	..	..	..	..	..	..	..
Ontario	..	..	..	..	..	..	..	..
Manitoba	1,572	5,483	6,800	5,663	7.1	6.0	31.7	10.9
Saskatchewan	1,695	5,782	6,575	5,449	6.3	7.6	34.9	7.9
Alberta	3,117	9,110	7,868	6,306	7.1	9.0	63.7	23.8
British Columbia	3,224	8,232	7,996	6,761	7.8	6.5	55.6	23.1
	Teaching Secondary Grades[1]							
			$	$	yrs.	yrs.	p.c.	p.c.
Newfoundland	1,071	430	7,003	6,200	5.7	6.9	57.2	43.5
Prince Edward Island	221	181	6,265	5,475	5.6	9.7	65.2	41.4
Nova Scotia	1,473	1,221	7,225	6,895	6.0	9.3	75.4	59.4
New Brunswick	1,315	1,002	6,727	5,550	6.2	8.3	64.7	45.9
Quebec	..	..	..	..	..	..	..	..
Ontario	..	..	..	..	..	..	..	..
Manitoba	2,378	1,386	8,871	7,167	6.6	5.4	80.1	64.3
Saskatchewan	2,711	1,301	8,482	6,889	8.3	8.2	73.8	52.2
Alberta	4,190	2,353	8,845	7,510	7.0	7.7	82.1	64.1
British Columbia	5,442	2,588	9,266	8,157	8.6	7.8	79.5	72.6

[1] A teacher teaching both elementary and secondary grades is classified by level according to type of schoo If he is teaching in a junior-high school or a junior-senior high school, or if he teaches in more than one school he counted as a "secondary" teacher. Otherwise, he is counted as "elementary".

Financial Support.—Table 7 shows details of the income of public school boards fo the years 1965-67. In most provinces, local taxation is the most important source o revenue, followed by provincial government grants. In 1967 all other sources of incom accounted for 2.7 p.c. of total current revenue. (See also p. 424.)

Not all provinces collect and publish figures for debenture indebtedness, although i is the usual practice in all provinces, except Newfoundland, for boards to finance ne

nstruction, at least in part, by issuing debentures. Provincial aid toward capital ex-nditures may take the form of a percentage of total cost, a fixed amount per classroom assistance with debenture debt charges. Many provinces guarantee debentures issued school boards and others assist in marketing them.

–Income of School Boards for Publicly Controlled Elementary and Secondary Schools, by Province, 1965-67

NOTE.—The receipts shown in this table do not include any amounts raised by loans or the sale of bonds or entures as all revenue of this nature must be repaid ultimately with money raised by local taxation.

Province and Year	Income from—			Total Current Revenue	Debenture Indebtedness[1]
	Provincial Government Grants	Local Taxation	Other Sources		
	$'000	$'000	$'000	$'000	$'000
ewfoundland 1965	22,674	617	2,809	26,100	..
1966	26,834	654	2,127	29,615	..
1967	32,179	703	2,887	35,769	..
ince Edward Island 1965	4,107	2,500	104	6,711	..
1966	4,898	2,727	99	7,724	3,494
1967	7,249	3,010	129	10,388	5,221
ova Scotia 1965	25,860	28,451	616	54,927	56,577
1966	29,176	30,466	1,541	61,183	61,333
1967	37,184	32,672	747	70,603	63,387
ew Brunswick 1965	10,020	31,177	662	41,859	26,957
1966	9,849	33,197	1,339	44,385	24,424
1967	47,865	—	930	48,795	—
ebec 1965	291,292	289,600	10,000	590,892	..
1966	343,441	289,095	11,356	643,892	..
1967	414,143	343,939	13,048	771,130	..
tario 1965	332,034	395,985	21,403	749,422	810,957
1966	386,351	458,256	28,574	873,181	976,308
1967	469,555	550,362	33,319	1,053,236	1,148,886
anitoba 1965	32,635	48,039	240	80,914	77,640
1966	37,135	53,827	481	91,443	87,081
1967	84,574	25,318	3,470	113,362	92,314
skatchewan 1965	42,815	53,795	2,338	98,948	65,784
1966	50,399	57,396	2,618	110,413	79,857
1967	53,498	65,720	3,194	122,412	95,120
berta 1965	78,470	82,238	1,801	162,509	175,947
1966	100,980	83,921	3,407	188,308	203,600
1967	118,299	98,293	7,621	224,213	257,731
itish Columbia 1965	77,500	101,807	4,395	183,702	..
1966	89,641	116,706	6,030	212,377	229,007
1967	97,184	143,099	6,285	246,568	289,950

[1] Net figures, after deduction of sinking funds.

Subsection 2.—Universities and Colleges

Institutions.—An institution of higher education in Canada is generally defined as e that offers one or more years of work beyond the most advanced high school grade in e province in which it is located, with all or part of the work offered being acceptable for edit toward a university degree or equivalent diploma. The definition thus excludes stitutions offering technical and vocational post-secondary courses for which credit is t given.

In 1968-69, there were 78 degree-granting institutions, 23 of which conferred, almost clusively, theology degrees. In addition, there were approximately 150 institutions fering university-level courses but not conferring degrees.

Enrolment.—Full-time university-grade enrolment continues to increase and it is estimated that enrolment, including that of teachers colleges, will be almost doubled by 1975-76.* Table 8 shows full-time enrolment by province (excluding teachers colleges) for the academic years ended 1966-69. In addition, there were about 104,000 part-time university-grade students (including about 10,500 graduate students) in attendance during the regular 1968-69 winter session, and an estimated 5,000 students take university-grade credit correspondence courses each year. University-grade summer school enrolment in 1968 was almost 99,000.

8.—Full-Time Regular Winter Session University-Grade Enrolment, by Province, Academic Years Ended 1966-69

Province	1965-66		1966-67		1967-68		1968-69	
	Total	Graduate Only	Total	Graduate Only	Total	Graduate Only	Total	Graduate Only
	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland	3,168	62	3,893	69	4,473	149	4,782	219
Prince Edward Island	924	—	1,139	—	1,369	—	1,555	—
Nova Scotia	9,457	460	9,806	522	10,501	680	11,905	741
New Brunswick	6,371	383	6,862	439	7,927	544	8,961	639
Quebec	67,316	5,810	75,070	6,500	82,610	7,662	64,401	5,977
Ontario	58,983	6,859	68,589	7,727	79,089	9,782	92,589	11,498
Manitoba	11,069	600	12,389	687	13,426	795	15,099	1,171
Saskatchewan	10,707	407	11,577	556	12,697	646	13,884	656
Alberta	14,749	1,304	16,983	1,603	19,688	1,924	24,922	2,467
British Columbia	23,144	1,311	26,364	1,616	29,427	2,005	31,995	2,752
Totals	**205,888**	**17,196**	**232,672**	**19,719**	**261,207**	**24,187**	**270,093**	**26,120**

Foreign enrolment has risen considerably during the past decade, and a larger proportion of the students coming to Canadian institutions are from countries other than the United States and Britain, as shown in Table 9. The United States, Hong Kong, France, Trinidad and Tobago, India and Britain each accounted for over 500 students in the latest year, and Pakistan, Malaysia, Viet-Nam, Jamaica, the Republic of China, Germany, Guyana and Formosa contributed from 200 to 400 each. About 150 countries or territories were represented in the figures.

* Zsigmond and Wenaas, *Enrolment in Educational Institutions by Province, 1951-52 to 1980-81*, Staff Study No. 2, Economic Council of Canada, 1970.

9.—Students from Other Countries in Canadian Universities, and Canadian Students in Universities in the United States and Britain, Academic Years Ended 1961-69

Academic Year Ended—	Total Full-Time University Enrolment in Canada	Students with Residence in—				Enrolment from Other Countries in Canada		Canadians Studying in—	
		United States	Britain	British West Indies	Other Countries	From all Countries	From British Commonwealth Only	United States[1]	Britain
	No.	No.	No.	No.	No.	No.	No.	No.	No.
1961	113,864	2,362	582	1,210	3,097	7,251	3,294	6,058	50
1962	128,894	2,660	577	1,251	3,412	7,900	3,552	6,571	55
1963	141,388	2,845	650	1,153	3,870	8,518	3,763	7,004	65
1964	158,388	3,193	687	1,214	4,396	9,490	4,202	8,458	65
1965	178,238	3,283	715	1,154	5,002	10,154	4,429	9,253	65
1966	205,888	3,395	886	1,064	5,939	11,284	5,021	9,755	66
1967	232,672	3,549	851	1,124	7,419	12,943	5,987	12,117	74
1968	261,207	3,910	1,042	1,202	9,202	15,356	7,238	12,144	78
1969	270,093	4,570	1,403	1,241	10,209	17,423	8,320	12,852	82

[1] Data from the Institute of International Education, New York. [2] Data from the Association of Commonwealth Universities, London, England.

Graduates.—Table **10** gives figures for graduates in most faculties for the academic ars ended 1967-69.

10.—Graduates from Universities and Colleges, Academic Years Ended 1967-69

Field of Study	1966-67		1967-68r		1968-69	
	Total	Female	Total	Female	Total	Female
	No.	No.	No.	No.	No.	No.
raduates in Arts, Pure Science and Commerce	**27,533**	**9,211**	**30,365**	**10,544**	**34,478**	**12,539**
Bachelors of Arts[1]	21,452	8,306	23,231	9,403	25,765	11,036
Bachelors of Science (in Arts)[2]	4,308	809	5,122	1,048	6,385	1,341
Bachelors of Commerce[3]	1,773	96	2,012	93	2,328	162
raduates in Applied Science	**2,664**	**15**	**2,995**	**24**	**3,301**	**25**
Bachelors of Applied Science in Engineering	2,420	11	2,678	18	2,961	20
Bachelors of Architecture	132	3	204	5	199	5
Bachelors of Forestry	112	1	113	1	141	—
raduates in Agriculture, Veterinary Science and Household Science	**1,078**	**497**	**1,144**	**555**	**1,215**	**595**
Bachelors of Agricultural Science	508	26	541	37	544	27
First degrees in Veterinary Science	103	5	94	10	112	9
Bachelors of Household Science	467	466	509	508	559	559
raduates in Education, Library Science and Social Service	**7,590**	**3,799**	**8,104**	**4,156**	**10,575**	**5,215**
First degrees in education or pedagogy	6,496	3,300	6,525	3,427	8,839	4,300
Librarian degrees and diplomas	309	229	383	275	485	348
Physical education first degrees and diplomas	654	200	801	249	764	300
Social work degrees	131	70	395	205	487	267
raduates in Medicine and Related Studies	**2,715**	**1,277**	**3,010**	**1,478**	**3,116**	**1,597**
Medical doctors	940	107	1,002	109	1,019	125
Dentists	310	18	311	13	340	20
Pharmacists	331	105	406	154	346	142
First degrees in nursing	810	796	955	932	1,059	1,038
Physiotherapy and occupational therapy	248	242	275	264	277	270
Chiropractic	35	4	26	3	41	2
Optometry	41	5	35	3	34	—
raduates in Law and Theology	**1,796**	**72**	**1,718**	**114**	**1,827**	**103**
First degrees and equivalent diplomas in law	1,041	55	1,173	67	1,323	93
Roman Catholic theological colleges	424	2	282	14	309	5
Protestant theological colleges	331	15	263	33	195	5
ther First Degrees and Equivalent Diplomas	**467**	**266**	**447**	**310**	**806**	**477**
Bachelors of Fine and Applied Arts	80	52	87	58	135	93
Bachelors of Interior Design	14	11	16	8	28	14
Journalism	57	26	53	39	70	41
Bachelors of Music	171	114	205	141	302	201
Others	145	63	86	64	271	128
raduate and Honorary Degrees	**7,361**	**1,373**	**8,500**	**1,595**	**7,852**	**1,364**
Honorary doctorates	321	24	300	22	333	27
Doctorates in course	788	60	1,006	98	1,108	87
Masters of Arts[4]	3,199	780	3,601	933	4,096	1,017
Masters of Science[5]	1,764	193	2,088	206	2,315	233
Licences[6]	1,289	316	1,505	336	[6]	[6]

[1] Includes Bachelors of Letters and Social Science. [2] Some institutions include Science degrees in Arts. Includes Bachelors of Accounting and Secretarial Science. [4] Includes M. Com., M. Ed., M. Paed., M.S.W., s well as M.A. In some institutions, M.Sc. degrees are included with M.A.s. [5] Includes M.A.Sc., M.S.A., .Sc. F., M. Arch., M.V.Sc., M. Sc. Dent., M. Surgery (where conferred separately), as well as M.Sc. [6] The Licence" in the French-language universities was considered as the next degree following the Bachelor until 967-68; in 1968-69 it is included at the Bachelor level.

Teaching Staffs.—Table 11 shows the trend in university teaching staffs since 196

11.—Full-Time Teaching Complement in Universities and Colleges, Academic Years Ended 1961-70

NOTE.—Figures are estimates based on returns from institutions representing from 50 to 90 p.c. of the enrolmen depending on the academic year. They include research personnel as well as junior and sessional lecturers and a sistants.

Academic Year Ended—	Teachers	Academic Year Ended—	Teachers
	No.		No.
1961	8,780	1966	15,100
1962	9,490	1967	18,200
1963	10,600	1968	20,600
1964	12,230	1969	23,500
1965	13,340	1970	23,900

Table 12 gives median salaries, by rank and region, for the staffs of 19 major institu tions for 1968-69.

12.—Median Salaries of Teachers at 19 Institutions, Academic Year 1968-69

NOTE.—Institutions include: *West*—Universities of Manitoba, Saskatchewan, Alberta, Calgary and Britis Columbia; *Central*—Bishop's, McGill, Queen's, Toronto, Victoria, Trinity, McMaster, Western Ontario and Ontar Institute for Studies in Education; *Atlantic*—Acadia, Dalhousie, St. Francis Xavier, Mount Allison and Ne Brunswick.

Rank	Region				Staff Com-plement
	Atlantic Provinces	Central Provinces	Western Provinces	Total	
	$	$	$	$	No.
Deans	19,450	24,300	23,600	23,450	166
Professors	16,554	19,438	18,732	18,982	2,114
Associate professors	12,983	14,218	14,067	14,207	2,876
Assistant professors	10,276	11,188	11,202	11,078	3,647
Instructors and lecturers	8,233	9,009	8,552	8,681	1,339
Totals, All Ranks	**11,214**	**13,368**	**12,775**	**12,847**	**10,354**

Finances.—Table 13 gives a 10-year series of the finances of Canadian universitie Since 1954 they have received more than one half of their revenue from government grant and a very small amount from municipal councils. Beginning with the academic yea 1951-52 and ending in 1966-67, the Federal Government provided university grants t help meet current operating costs. These grants were originally paid on the basis o 50 cents per head of population in each province and the eligible institutions received the share of the provincial allotment according to the number of full-time students in under graduate and graduate courses. The rate of grant was increased to $1.00 per capita i 1956-57, to $1.50 in 1958-59 and to $2.00 in 1962-63. In 1966-67, the grants, under somewhat modified formula, were increased to about $5.00 per capita. The Province o Quebec did not accept this grant for the years up to 1955-56. From 1956-57 to 1959-6 the payments refused by Quebec were held in trust by the Canadian Universities Founda

on (now the Association of Universities and Colleges of Canada), which administers he fund. In 1960-61, the Quebec Government and the Federal Government negotiated new tax-sharing agreement under which Quebec provided its own grants and was reimursed by an abatement of corporation tax. Commencing with 1967-68 the Federal overnment discontinued paying grants directly to universities. Instead, the government greed to transfer to the provinces financial resources (certain portions of federal revenues nd required cash payments) equal to either $15.00 per capita or 50 p.c. of the operating osts of post-secondary education, whichever is the greater. The financial resources so ransferred are disbursed by provincial governments at their discretion. (See also p. 424.)

The Federal Government also provides assistance to universities through the Univerty Capital Grants Fund which is administered by the Canada Council. The original mount in the fund was $50,000,000 (interest and profits to Mar. 31, 1969 increased it to ver $68,346,000), to be granted in amounts not exceeding 50 p.c. of specific building or apital equipment projects, having regard to the population of each province. Up to the nd of March 1969, a total of over $68,000,000 had been authorized. Grants are paid in our equal instalments spread over the period of construction, so that there is a time lag etween approval and payment. On Mar. 31, 1969, there remained a balance of unpaid rants totalling $2,870,000 for construction projects still in progress. Any interest earned n that amount during 1969-70 would be distributed on Mar. 31, 1970. The Canada ouncil was also endowed with an additional $50,000,000 (increased by $10,000,000 Apr. 3, 965), the interest on which is available for the provision of scholarships or other assistance n the fields of the arts, humanities and social sciences (see pp. 452-453).

13.—Current Income and Expenditure of Universities and Colleges, Academic Years Ended 1959-68

Academic Year Ended—	Current Income					Total Current Expenditure
	Endowments and Investments	Government Grants	Student Fees	Miscellaneous	Total	
	$'000	$'000	$'000	$'000	$'000	$'000
959	4,668	74,294	33,546	11,373	123,881	124,564
960	5,082	87,863	40,789	14,132	147,866	148,659
961	5,332	115,524	45,991	14,396	181,243	181,311
962	7,834	121,461	56,249	25,062	210,606	211,330
963	8,191	142,606	62,397	27,107	240,301	244,015
964	10,308	168,626	75,573	28,785	283,292	289,931
965	7,986	200,412	89,738	44,632	342,768	345,222
966	9,030	256,915	110,624	49,780	426,349	432,332
967	9,506	384,521	129,953	57,604	581,584	579,215
968	10,228	521,084	144,490	64,780	740,582	738,510

Subsection 3.—Vocational Education

Table **14** summarizes the data on full-time vocational training classes. The duration f these classes may vary from three weeks taken annually by indentured apprentices at rovincially operated trade schools, to three-year vocational high school courses or postecondary courses offered in provincial institutes of technology. Numerous skills are aught, ranging from short courses in welding or typing to extended courses for instrunent technicians or aircraft maintenance men. Students taking two-year or three-year ocational courses in public secondary schools may, upon completion, enter employment or nay continue other formal training in a trade school or an institute of technology.

In addition to the full-time vocational courses, a great variety of part-time instruction s offered by both public and private institutions as an alternative to full-time training r as an attraction to the individual interested in a hobby.

14.—Full-Time Enrolment in Vocational Courses, School Year 1968-69

Course	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.
	No.	No.	No.	No.	No.	No.
Publicly Sponsored—						
Vocational high schools	..	921	2,150	10,553	..	231,763
Post-secondary technical courses	713	—	913	467	14,010	27,004
Apprenticeship courses	978	87	2,231	225	..	10,122
Trade schools and vocational centres	5,521	1,494	10,142	8,078	..	71,784
Training in business and industry	..	..	354	..	..	14,849
Diploma schools of nursing	649	186	953	978	6,728	9,460
Nursing assistant schools	460	31	265	152	717	2,250
Privately Operated—						
Trade school courses	..	—	298[1]	291	..	3,182
Business school courses	..	..	582[2]	571	..	2,615

	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.
Publicly Sponsored—						
Vocational high schools	7,935	4,735	19,648	22,763	554	..
Post-secondary technical courses	1,224	1,145	6,420	3,265	—	55,161
Apprenticeship courses	1,222	2,121	7,946	3,432	38	28,402[3]
Trade schools and vocational centres	7,846	5,494	6,400	17,196	435	134,390[3]
Training in business and industry	..	1,826	4,478	1,291	59	..
Diploma schools of nursing	1,246	1,164	2,114	1,622	—	25,100
Nursing assistant schools	283	198	605	450	—	5,411
Privately Operated—						
Trade school courses	414	361	851	1,457	—	6,854[3]
Business school courses	1,209	1,096	726	911	—	7,710[3]

[1] Includes one school in Newfoundland. [2] Includes one school in Newfoundland and one in Prince Edward Island. [3] Excludes Quebec.

Subsection 4.—Adult and Correspondence Education

Throughout the years, the interest of adults in furthering their education has gained increasing impetus until today the provision of evening, extension and correspondence courses in a wide variety of subjects is an important part of the educational system. In the newly designated "community colleges", courses for adults are given in such subjects as engineering, home economics, agriculture, biology, business administration, applied and fine arts and a number of the technologies as well as vocational courses in such trades as hairdressing, automobile mechanics, plumbing, construction, etc., all of them made full use of by adults eager to increase their knowledge. Large numbers of adults also take advantage of the many courses made available by school boards, ranging from those leading to matriculation to courses involving individual and community concerns. Universities have in the past provided extension courses in many subjects but since many such courses are now administered by the community colleges, the situation with respect to them is at present under review. Universities continue to receive applications in increasing volume from adults anxious to work on a degree, extend their post-graduate studies or enrol for advanced courses in their own field.

The latest DBS survey on correspondence education in Canada includes reports from provincial government correspondence schools, institutes of technology, universities, privately operated trade and commercial schools, and business and professional associations. These five major groups reported a total enrolment of 121,632, largely adult, for the academic year 1967-68, distributed as follows: provincial government correspondence schools 87,962; institutes of technology, 1,809; universities, 16,048; private trade schools and business colleges, 4,575; and associations, 11,238. Correspondence study is of particular value

o the ill and handicapped and also provides an opportunity for prisoners to continue their ducation. Universities report considerable activity in this area; most of the students are nrolled in diploma certificate courses, many of which are offered for associations. However, here are indications, particularly over the past three years, that enrolment in correspondence courses for credit toward a university degree or university diploma is gradually decreasing.

PART II.—CULTURAL ACTIVITIES RELATED TO EDUCATION

Section 1.—The Arts and Education

Fine Art Schools, Galleries and Organizations

Fine art (architecture, painting and drawing, commercial and decorative arts, graphics, ceramics and sculpture) appears as an elective subject of the faculty of arts in a number of universities, where it may be taken as one of five, six or more subjects for a year or two. Eight universities offer a Bachelor of Fine Arts degree:—

Mount Allison University, Sackville, N.B.
Sir George Williams University, Montreal, Que.
University of Windsor, Windsor, Ont.
University of Manitoba, Winnipeg, Man.
University of Alberta, Edmonton, Alta.
University of Calgary, Calgary, Alta.
University of British Columbia, Vancouver, B.C.
University of Victoria, Victoria, B.C.

Twelve universities offer a Bachelor of Arts degree with a major in fine art:—

Université de Moncton, Moncton, N.B.
McGill University, Montreal, Que.
Sir George Williams University, Montreal, Que.
University of Ottawa, Ottawa, Ont.
University of Toronto, Toronto, Ont.
York University, Toronto, Ont.
McMaster University, Hamilton, Ont.
University of Guelph, Guelph, Ont.
University of Western Ontario, London, Ont.
University of Windsor, Windsor, Ont.
University of Saskatchewan, Saskatoon and Regina, Sask.
University of British Columbia, Vancouver, B.C.

There are many schools of art with varying academic requirements for admission. These offer diploma or certificate courses and are concerned largely with the technical development of the artist. Among those widely known are:—

Nova Scotia College of Art, Halifax, N.S.
École des Beaux-Arts, Quebec, Que.
École des Beaux-Arts, Montreal, Que.
Institut des Arts Appliqués, Montreal, Que.
School of Art and Design, Montreal Museum of Fine Arts, Montreal, Que.
Humber College of Applied Arts and Technology, Toronto, Ont.
Ontario College of Art, Toronto, Ont.
Three Schools in Toronto, Ont.—
Artists' Workshop
Hockley Valley School
The New School of Art

Sheridan College of Applied Arts and Technology, Brampton, Ont.
Doon School of Fine Arts, Kitchener, Ont.
University of Manitoba School of Art, Winnipeg, Man.
School of Art, Regina Campus, University of Saskatchewan, Regina, Sask.
Alberta College of Art, Calgary, Alta.
Banff School of Fine Arts, Banff, Alta.
Southern Alberta Institute of Technology, Calgary, Alta.
Kootenay School of Art, Nelson, B.C.
Capilano College, Vancouver, B.C.
Vancouver School of Art, Vancouver, B.C.
University of Victoria, Victoria, B.C.

Courses in these schools vary in length with the requirements of the individual student but may extend over as many as four years. In some of these schools fine crafts as well as fine arts are taught. Summer schools of art are sponsored by some of the foregoing institutions, by universities and by various independent groups. One of the more important summer schools is the Banff School of Fine Arts, affiliated with the University of Calgary.

Public art galleries in the principal cities perform valuable educational services among adults and children. Children's Saturday classes, conducted tours for school pupils and adults, radio talks, lectures and concerts are features of the programs of the various galleries. Many of these institutions supply their surrounding areas with travelling exhibitions and some range even farther afield. Several organizations such as the Maritime Art Association, the Atlantic Provinces Art Circuit, the Western Canada Art Circuit, the Art Institute of Ontario, the Art Gallery of Ontario and the new Fédération des centres culturels du Québec have been founded to carry out this sort of travelling program on a regional basis. On a smaller scale, art circuits are organized to serve certain areas such as those around St. John's, Nfld., Charlottetown, P.E.I., Trois-Rivières and Hull, Que., and Winnipeg, Man. The National Gallery of Canada conducts a nation-wide program of this nature and is one of the largest circulating agencies in North America (see p. 443). Several galleries maintain an art-rental service.

Among the principal public art galleries are:—

Fathers of Confederation Art Gallery and Museum, Charlottetown, P.E.I.
Beaverbrook Art Gallery, Fredericton, N.B.
The New Brunswick Museum, Saint John, N.B.
Musée du Québec, Quebec, Que.
Montreal Museum of Fine Arts, Montreal, Que.
Musée d'Art Contemporain, Montreal, Que.
National Gallery of Canada, Ottawa, Ont.
Art Gallery of Ontario, Toronto, Ont.
Art Gallery of Hamilton, Hamilton, Ont.
Kitchener-Waterloo Art Gallery, Kitchener, Ont.
Public Library and Art Museum, London, Ont.
Sarnia Public Library and Art Gallery, Sarnia, Ont.
Willistead Art Gallery, Windsor, Ont.
Winnipeg Art Gallery, Winnipeg, Man.
Mendel Art Gallery, Saskatoon, Sask.
Moose Jaw Art Gallery and Museum, Moose Jaw, Sask.
Edmonton Art Gallery, Edmonton, Alta.
Vancouver Art Gallery, Vancouver, B.C.
Art Gallery of Greater Victoria, Victoria, B.C.
Art Gallery of Victoria, Victoria, B.C.

Other important collections of art are housed in arts councils and university galleries. Among the university galleries are:—

St. John's Memorial University Art Gallery, St. John's, Nfld.
Anna Leonowens Gallery, Nova Scotia College of Art, Halifax, N.S.
Dalhousie University Art Gallery, Halifax, N.S.
Creative Art Centre of the University of New Brunswick, Fredericton, N.B.

Owens Museum of Fine Arts, Mount Allison University, Sackville, N.B.
Université de Moncton, Moncton, N.B.
Séminaire des Clercs de St-Viateur, Joliette, Que.
Université Laval, Quebec, Que.
Loyola of Montreal Museum, Montreal, Que.
McGill University, Montreal, Que.
Sir George Williams University Art Gallery, Montreal, Que.
Carleton University, Ottawa, Ont.
Agnes Etherington Art Centre, Queen's University, Kingston, Ont.
Hart House, and Sigmund Samuel Canadiana Gallery of the University of Toronto, Toronto, Ont.
York University, Toronto, Ont.
University of Waterloo Art Gallery, Waterloo, Ont.
McIntosh Memorial Art Gallery, University of Western Ontario, London, Ont.
University of Manitoba, Winnipeg, Man.
Norman Mackenzie Art Gallery of the University of Saskatchewan, Regina, Sask.
University of Saskatchewan, Saskatoon, Sask.
University of Alberta, Edmonton, Alta.
University of Calgary, Calgary, Alta.
Fine Arts Gallery of the University of British Columbia, Vancouver, B.C.

Five of the more important galleries connected with arts councils are the St. Catharines nd District Arts Council, St. Catharines, Ont., the Glenhyrst Arts Council, Brantford, nt., the Department of Fine Arts, McMaster University, Hamilton, Ont., the Brandon llied Arts Centre, Brandon, Man., and the Art Gallery of the Calgary Allied Arts Centre, algary, Alta.

Among the leading fine art organizations of national scope, exclusive of museums nd art galleries, are:—

Association of Canadian Industrial Designers
National Design Council
Canadian Conference of the Arts
Canadian Craftsmen's Association
Canadian Society for Education through Art
Canadian Group of Painters
Canadian Guild of Potters
Canadian Handicrafts Guild
Canadian Museums Association
Canadian Society of Graphic Art
Canadian Society of Painter-Etchers and Engravers
Canadian Society of Painters in Water Colour
Canadian Society of Landscape Architects
Federation of Canadian Woodcarvers
Royal Canadian Academy of Arts
Royal Architectural Institute of Canada
Sculptors' Society of Canada
Town Planning Institute of Canada
Canadian Centre for Films on Art
Community Planning Association of Canada.

The National Gallery of Canada.—The beginnings of the National Gallery of anada are associated with the founding of the Royal Canadian Academy of Arts in 1880. he Marquess of Lorne, then Governor General, had recommended and assisted the founding f the Academy and among the tasks he assigned to that institution was the establishment f a National Gallery at the seat of government. Until 1907 the National Gallery was nder the direct control of a Minister of the Crown but in that year, in response to public emand, an Advisory Arts Council consisting of three laymen was appointed by the overnment to administer grants to the National Gallery. Three years later, the first rofessional curator was appointed.

In 1913, the National Gallery was incorporated by Act of Parliament (RSC 195 c. 186) and placed under the administration of a Board of Trustees appointed by th Governor General in Council; its function was to encourage public interest in the art and to promote the interests of art throughout the country. Under this managemen the Gallery increased its collections and developed into an art institution worthy of inte national recognition. Today, a Board of Trustees, reporting to the Secretary of State administers all the National Museums of Canada, including the National Gallery. I 1960, the Gallery entered a new era in its history when the entire national collection an the staff and equipment necessary to its maintenance were transferred to new moder quarters—the Lorne Building in downtown Ottawa—which provides adequate wel lighted space for hanging the permanent collection and for displaying travelling exhibitions

The Gallery's collections have been built up along international lines and give th people of Canada an indication of the origins from which their own tradition is developing The collection of Canadian art, the most extensive and important in existence, is continuall being augmented by the purchase of works from the Biennials of Canadian Art and othe sources. The collections include many Old Masters, among which are twelve acquire from the famous Liechtenstein collection; extensive war collections; the Massey collectio presented to the Gallery during 1946-50 by the Massey Foundation; a growing collection contemporary art; prints and drawings; and diploma works of the Royal Canadian Academy The prints and drawings collection consists of more than 5,000 items. The services of th Gallery include the operation of a reference library open to the public, which contains mo than 10,000 volumes and periodicals on the history of art and other related subjects.

The National Conservation Research Laboratory, established in 1964, provid technical information on works of art from public and private collections across Canad and is responsible for the conservation of the national art collections. In addition, researc is carried out on the effects of environment on works of art and on the durability of artist materials.

An active program of exhibitions, lectures, films and guided tours is maintained f visitors to the Gallery in Ottawa. The interests of the country as a whole are serve by circulating exhibitions, lecture tours, publications, reproductions and filmstrips pr pared by the National Gallery staff. Promotion of and information on art films are handle by the Canadian Centre for Films on Art and their distribution by the Canadian Fil Institute. The Gallery promotes interest in Canadian art abroad by participating in inte national exhibitions such as the Biennials of Venice, São Paulo and Paris, and by preparin major exhibitions of Canadian art for showing in other countries. At the same time, brings important exhibitions from abroad for circulation in Canada.

Performing Arts Schools.—Degree courses in music, the most widespread of th performing arts (which also include opera, drama, ballet and dance) are offered at a numb of Canadian universities, listed as follows:—

St. Francis Xavier University, Antigonish, N.S.—B.A. major
Dalhousie University, Halifax, N.S.—B. Mus. Ed.
Mount Saint Vincent, Halifax, N.S.—B.A. (mus.)
Acadia University, Wolfville, N.S.—B.A. major, L. Mus., and B. Mus.
Mount Allison University, Sackville, N.B.—B.A. major, B. Mus., B.M. Ed.
Université de Moncton, Moncton, N.B.—B.A. (mus.)
Université Laval, Quebec, Que.—L. Mus., B. Mus., D. Mus.
McGill University, Montreal, Que.—L. Mus., B. Mus., M.M.A. (musical arts)
Université de Montréal, Montreal, Que.—L. Mus., B. Mus., and D. Mus.
Carleton University, Ottawa, Ont.—B.A. (mus.)
Queen's University, Kingston, Ont.—B. Mus., B.A. major
University of Toronto, Toronto, Ont.—B. Mus., B.A. (mus.), Art. Dip. Mus., Lic. D Mus., Mus. Bac. (performance), Mus. Bac. (history, literature, composition, educatio Mus. M., M.A. (musicology), Mus. Doc., Ph.D. (musicology)
McMaster University, Hamilton, Ont.—Mus. Bac.

University of Western Ontario, London, Ont.—B.A. major, Mus. B., M.A. (musicology), and Mus. M.
University of Windsor, Windsor, Ont.—B.A. (mus.) and B. Mus.
University of Manitoba, Winnipeg, Man.—B.A. major, A.M.M., L.M.M. and B. Mus.
Brandon University, Brandon, Man.—B. Mus. (education or performance)
University of Saskatchewan, Regina, Sask.—A.M.U.S., L.M.U.S., B. Mus., B. Mus. Ed.
University of Saskatchewan, Saskatoon, Sask.—B.A. major, B. Mus., B. Mus. Ed.
University of Lethbridge, Lethbridge, Alta.—B.A. (mus.)
University of Alberta, Edmonton, Alta.—B. Mus. and M. Mus.
University of Calgary, Calgary, Alta.—B. Mus.
University of British Columbia, Vancouver, B.C.—B.A. major, B. Mus. and M. Mus.
University of Victoria, Victoria, B.C.—B. Mus., M. Mus., Ph.D. (mus.)

Advanced instruction in music is also given at the Conservatoire de Musique et d'Art ramatique in both Montreal and Quebec. Opera may be studied at the Royal Conserv- ory Opera School of the University of Toronto where advanced students work in close laboration with the Canadian Opera Company and also at the Conservatoire de Musique d'Art Dramatique and at the Banff School of Fine Arts (summer) at Banff, Alta., an iliate of the University of Calgary.

Degree courses in drama are offered at the following universities:—

Université de Moncton, Moncton, N.B.—B.A. (art dramatique)
Sir George Williams University, Montreal, Que.—B.F.A. (drama)
Queen's University, Kingston, Ont.—B.A. (drama)
University of Toronto, Toronto, Ont.—M.A. (drama)
University of Windsor, Windsor, Ont.—B.A. (drama), B.F.A. (dramatic art)
University of Saskatchewan, Regina, Sask.—B.F.A. (drama)
University of Saskatchewan, Saskatoon, Sask.—B.A. (drama), M.A. (drama)
University of Alberta, Edmonton, Alta.—B.A. (drama), M.A. (drama), B.F.A. (drama), M.F.A. (drama, design or directing)
University of Calgary, Calgary, Alta.—B.F.A. (drama)
University of British Columbia, Vancouver, B.C.—B.A. (theatre), M.A. (theatre)
University of Victoria, Victoria, B.C.—B.F.A. (theatre)

Advanced instruction in drama is also given during the summer at the Banff School of ne Arts. The National Theatre School of Canada offers complete practical training for ented students. It is bilingual, courses being held at Montreal, Que., from October to ne. Three years are required for the acting course and two for technical and production dies.

The National Ballet School at Toronto is the only residential ballet school in Canada. offers academic studies together with practical instruction. Professional instruction is o offered by two other major Canadian ballet companies, Les Grands Ballets Canadiens, ntreal, and the Royal Winnipeg Ballet, Winnipeg, and advanced ballet training is given ring the summer at the Banff School of Fine Arts.

useums

The museums of Canada, as elsewhere, range from small, locally gathered, historical ifacts and objects to large government-operated institutions which collect, classify and play such objects as may be necessary to study and disseminate knowledge of natural tory, human history, science and technology, with special but not exclusive reference to nada. Many of these larger museums, especially the National Museums of Canada and e Royal Ontario Museum, have a long, distinguished heritage in research and publication scholarly works and serve an important role as educational and cultural centres. In s area they have an advantage over other agencies of education in that they are able provide, for study and exhibition, actual, original objects as well as descriptions and tures of such objects. They offer many educational services to the public through

exhibits, guided tours, lectures and scientific and popular publications. The followi museums have staff members who are specifically charged with organizing programs education and providing extension services:—

Nova Scotia Museum, Halifax, N.S.
McGill University Museums, Montreal, Que.
National Museums of Canada, Ottawa, Ont.
Royal Ontario Museum, Toronto, Ont.
Saskatchewan Museum of Natural History, Regina, Sask.

Other museums that conduct educational and extension programs using the regul curatorial and administrative staff are:—

The New Brunswick Museum, Saint John, N.B.
Museum of the Province of Quebec, Quebec, Que.
The Manitoba Museum, Winnipeg, Man.
Provincial Museum of Natural History and Anthropology, Victoria, B.C.

Direct work with schools may involve the holding of classes within the museum or vis of museum lecturers, with exhibits, to the schools. More informal are the guided tou for visiting school classes, the lending of specimens, slides, filmstrips or motion pictu films to schools, and the training of student-teachers in the educational use of the museu A number of museums have special programs for children not directly associated wi school work including Saturday lectures and film showings, activity groups, nature clu and field excursions. At the higher educational level, museum field parties provide search training to university students in many disciplines and museum staffs act as p fessional consultants, answer a host of enquiries on scientific and technical subjects, a serve as consultants or advisers to foreign scholars and institutions.

For adult laymen, museums offer lectures, film showings and guided tours, the lat usually available throughout the year. Staff members may be sent to give lectures service clubs, church groups, parent-teacher associations and hobby clubs. The latt such as naturalists' groups, mineral clubs and astronomy societies, may use the museum their headquarters. Travelling exhibits are prepared for showing at local fairs, histori celebrations and conventions. At least seven Canadian museums have conducted regu radio or television programs and others have made occasional contributions. Some h torical museums stage annual events during which the arts, crafts or industries represent by the exhibits are demonstrated to the public.

The National Museums of Canada.—The National Museums originated in the G logical Survey of Canada and their early history is inseparable from that institution. T first united Parliament of Upper and Lower Canada met in Montreal in 1841. In J of that year, the Natural History Society of Montreal and the Literary and Histori Society of Quebec petitioned the government to carry out a geological survey. As a res a resolution was passed in the Estimates of Sept. 10 to defray the expenses of a geologi survey of the Province of Canada.

William E. Logan was appointed the first director of the Geological Survey in 18 He and his assistant, Alexander Murray, undertook their first field work in 1843, and th collections formed the humble beginnings of the National Museums. Logan was m more than a geologist and his interests extended to other branches of natural science. diaries contain accurate drawings of named plants. He wrote in his annual report for year 1852-53: "It may be a consideration whether a growing country like Canada co not afford to anticipate what future importance may require in the nature of a natio museum and at some future time not far distant, erect an appropriate edifice especia planned for the purpose".

In the meantime, the officers of the Geological Survey continued to collect for geological museum. In 1856 Elkanah Billings, a palæontologist and the first of a num

of specialists, was added to the staff. Legislation passed that same year to continue the work of the Geological Survey specified the establishment of a geological museum open to the public to exhibit specimens, books and instruments.

In 1874 the practice of recording the number of visitors to the museum was started; from May 1874 to April 1875 the number of visitors was 1,017 and by April 1896 it had reached 31,595 annually. In 1874 the distribution of specimens of minerals, rocks and other natural history objects to schools was started with a donation to the Board of School Teachers of Elora, Ont. The first organized museum lecture program was undertaken in 1912 with a series of lectures for young people after school. By 1915, Saturday morning lectures for children and evening lectures for adults—both features of the museum program today—were in operation. Prior to 1880 the museum occupied several buildings in Montreal, but that year the Geological Survey moved to Ottawa and moved into the former Clarendon Hotel on Sussex Street. Construction of the Victoria Memorial Museum building was started in 1904 and six years later the Geological Survey moved in.

The scope of the museum was enlarged in the Act of Apr. 28, 1877 "to make better provision respecting the Geological and Natural History Survey of Canada and for maintenance of the museum in connection therewith". In that Act the survey was instructed "to study and report upon the flora and fauna of the Dominion" and "to continue to collect the necessary material for a Canadian museum of natural history, mineralogy and geology". As early as the Act of 1856 the Geological Survey of Canada had been authorized to "from time to time" distribute publications relative to the survey. From this authority developed the museum's series of scientific bulletins presenting the researches of its staff.

The Act of 1877 established the Geological Survey and the museum on a continuing basis and permitted the appointment of specialists in natural history. John Macoun was appointed to establish the division of biology in 1882. He was an eminent botanist who had accompanied the expedition of Sanford Fleming to explore Western Canada in 1871. Macoun's report of 1874 laid the groundwork for the establishment of western Canadian agriculture. He also published a catalogue of Canadian birds. In 1895 under the third director of the Geological Survey, George M. Dawson, the museum entered the field of Canadian anthropology.

In 1910 the museum began an expanded program of research and exhibition under the direction of R. W. Brock, then director of the Geological Survey of Canada. Unfortunately this program was curtailed during the first World War because the burning of the Parliament Buildings in 1916 forced Parliament to occupy the museum building until 1919. Later, expansion of the exhibition halls was handicapped by the museum sharing its building with the National Gallery of Canada and the Geological Survey of Canada. In 1927 the Governor General in Council gave authority "to designate the museum branch of the Department of Mines as the National Museum of Canada". In 1956 the museum was divided into two branches, the Museum of Natural History and the Museum of Human History. Ten years later, a third branch, the Museum of Science and Technology, was formed. On Apr. 1, 1968, the National Museums Act was proclaimed by Parliament which brought the three branches of the National Museum of Canada and the National Gallery of Canada under the National Museums Corporation.

The Act specified a 14-member board of trustees with over-all responsibility for policy and operations of the National Museums of Canada. The Board includes a chairman and a vice-chairman, each appointed for a five-year period. The other members are appointed for terms ranging from two to four years each. The new Act also created the position of secretary-general with responsibility for the financial and administrative arrangements of the museums. The names for the three museums were changed—the Natural History Branch became the National Museum of Natural Sciences; the Human History Branch, the National Museum of Man; and the Science and Technology Branch, the National Museum of Science and Technology. The name of the National Gallery of Canada remained unchanged.

The responsibilities of a great museum include collecting, preserving and storing object related to the various disciplines within its area of activities. Of equal importance is th research carried out by specialists in these fields and the publication of their findings Museums exhibit artifacts from their collections in attractively designed displays to il lustrate the scientific origins of the various subjects. This, however, is only part of a mu seum's extensive education program, which extends to lectures, publications, enquiries consultations, workshops, guided tours for children and adults alike, travelling exhibits loans, library services and radio and television programs. The National Museums o Canada present all these facets for the enjoyment and education of the people of Canada.

During the year ended Mar. 31, 1969, the National Museum of Natural Sciences an the National Museum of Man together recorded 301,094 visitors, the National Museum o Science and Technology 405,808 visitors and the National Gallery 428,462 visitors; th Canadian War Museum, which is part of the Museum of Man, and the National Aeronau tical Collection, which is part of the Museum of Science and Technology, had 284,217 an 101,751 visitors, respectively. In all, some 1,135,364 persons visited the four museums.

Recent activities in the Museum of Natural Sciences, the Museum of Man and th Museum of Science and Technology are outlined in the following paragraphs; the responsi bilities of the National Gallery are discussed on pp. 443–444. The staff common to th four institutions—concerned with exhibition and educational, technical, administrativ and financial functions—totalled 377, including five executive, 91 scientific and professiona 131 administrative and administrative support, 83 general technical and 40 operationa employees; an additional 27 casual employees were on staff during the year.

An important development in 1969 was the decision to completely renovate the Vic toria Museum Building in Ottawa, as well as most of the Museum of Natural Sciences an the Museum of Man exhibits which had been housed in that building for many years. Th Museum of Science and Technology, in existence only since 1967, is located in a building i east Ottawa, specially designed for the purpose.

The National Museum of Natural Sciences contains divisions of botany, zoology geology and palæontology. During the year 1968-69, more than 275,000 specimens wer added to its collections as a result of field trips, purchases, donations and exchanges. Pa ticularly noteworthy was the donation of the valuable Johannsen collection of shells whic comprises 5,500 specimens arranged in display cases.

The Museum staff was engaged during the year in 65 major research projects an 25 projects of lesser import. Field research included 35 different expeditions and excursion in widely scattered locations ranging from Baffin Island, the Mackenzie delta and Alask in the north, to Florida, Panama, the Caribbean, the Sargasso Sea and Tierra del Fueg in the south. This work gave support to such research enterprises as the Polar Continenta Shelf Project and the *Hudson* and *Sackville* expeditions undertaken by the Departmer of Energy, Mines and Resources. The Museum supported 24 projects undertaken i universities by staff members or by research associates and provided financial assistanc research facilities and field work for three National Research Council postdoctoral fellow

The staff generally was intensively engaged in planning the new display halls that wi be built into the renovated Victoria Museum Building, an activity that has been give very high priority in order to enable the Museum, at the earliest possible date, to mor completely fulfil its mandate to inform and educate the public. An exhibit of 13 cases o minerals from the national mineralogical collection was prepared and placed on displa temporarily in Logan Hall of the Geological Survey of Canada.

The Canadian Oceanographic Identification Centre of the Museum processed abou 350,000 specimens during the year, mainly for other departments of government. Thirty five publications were issued and as many more were in preparation for publication, an two short films were produced by the Zoology Division.

The National Museum of Man contains divisions of archaeology, folklore and history, nd ethnology, as well as the Canadian War Museum. During 1969, the Archaeological)ivision dug some 60 sites in Canada and surveyed and tested other areas. The History)ivision, with the help of nine contractees, conducted research into the politics and econo- ics of New France, the Indians of Western Canada, the industrial history of Nova cotia, the social history of Lower Canada, the status of women in Upper Canada, and the xplorations of arctic and subarctic Canada. The Folklore Division issued 20 research ontracts that related to the folklore of Canadian ethnic groups and staff members undertook tudies of Icelandic, German, and French-Canadian material in Western Canada. Ethnol- gy Division officers did field studies with the Golden Lake Algonquins, the Odanak benakis, the Alert Bay Kwakiutl, the Carrier-Chilcotin people of British Columbia, and he Cree and Chipewyans of northern Saskatchewan. Additional contracts were issued o do salvage work in Canadian ethnology and linguistics and for curatorial work on the ollections.

The renovation of the Victoria Museum Building required the removal of three divi- ions of the Museum of Man to other quarters and the stripping of most of the old exhibition alls. The staff was involved in a major planning effort to ensure that the exhibits in the xpanded and renovated museum would be compatible with the newest techniques, that hey be informative, and that they represent all the major disciplines of the Museum of Man.

Among the more successful of the exhibits on display in 1969, mention should be made f the "Masterpieces of Indian and Eskimo Art from Canada", which was very well received n Paris and in Ottawa. A special exhibit of Ukrainian folk art attracted 10,000 visitors n Easter weekend. During the year, display materials were lent to many institutions for emporary exhibit. Staff scientists attended a number of national and international onferences and were invited to lecture in several centres. They also served as consultants nd advisers for other institutions and countries. During the year they published seven nonographs and 38 other publications dealing with their studies of Canada, and 30 other manuscripts were in preparation for publication.

The Canadian War Museum, which is part of the National Museum of Man, was pened to the public in 1942. However, its space was limited until 1967 when it was moved o larger quarters and was able for the first time to show articles of war that had been gathered and kept in storage for decades. The Museum collects and displays artifacts of Canada's military past. Most of the material is Canadian but some is from other countries whose military history has been linked at some time with Canada. Many of the artifacts are gifts from individuals. The oldest article in the Museum is a Viking sword which may date from the last half of the 10th century. During 1969, a considerable number of articles were added to the collections, including vehicles, uniforms, medals, and historical films. Also, two notable exhibits were opened: the "D-Day" diorama, an exact 24-foot-scale model of the Canadian landing in France, was opened on June 6, the 25th anniversary of the event, and the Museum's first travelling exhibit, "Canada and the First World War", was first shown to the public at the Centennial Museum in Vancouver.

The National Museum of Science and Technology has the function of a cultural-educational institution, designed to bring scientific literacy to the visiting public and to familiarize them with the language, events and history of science. In the museum, visitors are confronted principally by demonstrations of scientific principles and displays which, by means of artifacts and texts, correlate these principles with the development of tech- nology. All this is done with particular emphasis on the technologies of ground transporta- tion, aviation, agriculture, shipping and industrial technologies which have been so closely fused to the history of this nation.

The Museum displays are colourful and inventive, designed to involve people in the learning process. Visitors are asked to participate in experiments and in making things work; to explore the technological park; to ride in a double-decker bus or to ride down a

track in a gondola car; to push a button or wind a crank to learn some physical law; or to sit in the driver's seat of a giant steam locomotive or a farm tractor. Museum collections are made available to other museums in Canada and abroad, with a view to bringing the story of science and technology to the widest audience possible. The National Aeronautical Collection is located in aircraft hangars at Rockcliffe, east of Ottawa. There are displayed some 50 of Canada's national collection of about 80 aircraft, together with engines and other artifacts relating to the development of aviation, so important in Canada and to which so many Canadian contributions have been made.

The Museum sponsors lectures on the history of science and technology by known authorities. A systematic program of school tours for children in Ontario and Quebec has been developed to fit in with curriculum requirements. Broadly speaking, all programs are built around three general themes relating to national development—how man has overcome space and time in this vast land by various methods of transportation and communication; how man has changed his environment with science and technology and the tools he has built and used; and how man's living habits have changed as he moved from sod hut and log cabin existence to his present sophisticated environment. The Museum is planning publications to expand the content of its exhibits and to give popular accounts of Canadian scientific and technological achievements. Because the emphasis in the Museum is on being a bright, alert and lively showplace of the development and trends in modern science, new exhibits and temporary exhibits are added each year, making an approximate 20-p.c. change.

Thus, the National Museum of Science and Technology of Canada is in the vanguard of modern museums throughout the world which are emphasizing cultural-educational functions in lieu of traditional museum functions. Visitors to this Museum can have a meaningful experience in Canadian scientific and technological developments as well as in world advancements in these fields.

Section 2.—Educational Functions of the Canadian Broadcasting Corporation

The educational activities of the CBC take several different forms: radio and television programs for schools; instruction programs for adults; general information programming for children and adults; and the sale of a variety of publications, recordings, audiotapes and films derived from broadcast material.

School Broadcasts.—The CBC provides facilities and production assistance for radio and television school programs at primary and secondary school levels. These programs are broadcast in the general program services of the CBC but are intended for classroom use.

Programs for national distribution are designed as enrichment material and are based on elements common to all provincial curricula. They are planned in co-operation with a special committee of the Council of Ministers of Education, including representatives of the teaching profession. To date, the CBC has paid the entire cost of the national school programs. At the provincial level, programs follow provincial school curricula closely and are planned in co-operation with the various provincial departments of education. They are financed on a cost-sharing basis.

In the course of a year, CBC radio and television carry some 4,000 school programs. Subjects dealt with in the English services in 1969-70 included science, communications, music, theatre, social institutions, Canadian literature and history, and the lives of children in other countries. Programs in the French services included music, language, science, physical education and junior art work.

Special Arrangements.—Since broadcasting facilities fall under federal jurisdiction and education under provincial authority, the CBC was asked to act as licensee for a proposed UHF television station in Toronto to carry programs of the Ontario Department

Education. The station application was approved by the CRTC in January 1970, ith a proposed opening date in the autumn. By agreement between the CBC and the ED, the CBC would provide, operate and pay (on a fully recoverable basis) for the ansmitter, antenna and associated technical facilities, while the Department would pply and pay for all programs.

Another co-operative arrangement involves CBXFT, the CBC's French-language levision station in Edmonton which opened in March 1970. The station leases about 40 urs a week of its program time to the Metropolitan Edmonton Educational TV Asso- ation (MEETA). During some periods of the day the station carries the regular French twork programming of the CBC. At other times, it transmits the English-language ducational programs prepared and presented by MEETA, representing the Alberta epartment of Education, the Edmonton public and separate school boards, the University Alberta and school boards in surrounding areas. This arrangement is to continue for period of up to three years.

Courses for Adults.—The CBC French services, radio and television, offer a number adult education courses in conjunction with university authorities. Subjects for 1969-70 cluded French literature, contemporary Quebec theatre, Greek and Roman history, odern medicine (a postgraduate series for doctors), Canadian history, audio-visual chniques and human geography. The CBC FM network broadcast a 10-week course of ve lessons a week in conversational French, with printed lesson guides available to listeners r a small charge.

The CBC Northern Service introduced a special series of programs to teach Northern anada listeners useful Eskimo words and phrases. The weekly program presents "Es- imo for Beginners" in conversational style, together with various examples of Eskimo ultural expression through music, song and story.

Youth Programming.—In addition to school broadcasts, CBC radio and television roduce a variety of general entertainment and information programming for children nd young people. In the French and English services there are programs of stories, songs, uppets and other learning and play activities for pre-schoolers, plus a variety of material r older children including music, comedy, student quiz programs, adventure series, agazine and interview shows, cartoons and documentary films. Programs for teenagers ften involve young people themselves in planning and production, and reflect their own nterests and attitudes.

Information Programming.—Much of the CBC's programming is educational in broad, informal sense—Canadian and international news coverage, live broadcasts of pecial events and public occasions, and programs of comment, interview, discussion and ocumentary on current affairs. Some such programs involve the public directly in iscussion, through "teach-in" or "town meeting" formats, or the popular "phone-in" nd "phone-out" techniques of program participation. CBC radio and television also ffer regular series of special-interest programs in areas such as science, literature, art, usic, film, language, agriculture and resources, consumer affairs, home and family interests, he social sciences, business and labour, Indian affairs, and religion and philosophy.

Educational Resource Material.—Both the French and English services of the BC publish and sell selected program texts in book form. The English-language pub- ications are mainly from lecture and discussion series broadcast on CBC radio and are idely used in schools and universities. Some spoken-word recordings are also published, uch as readings by Canadian poets. The French-language material available for sale ncludes the texts of certain interviews and talks, and also records, books, games and toys erived from popular children's programs.

Le comité de linguistique of the CBC's French services, whose members are CBC staff with special qualifications in language, is concerned with maintaining a high standard of

French in CBC programs and in the Corporation's general activities and operations. O of the committee's current projects is the compilation of a glossary of French terms used radio and television.

CBC Learning Systems, a section of the English-language publications branch, h an increasing library of sound tapes from selected radio talks and documentary seri Tapes are made available to educational institutions, at a nominal charge.

The availability of CBC educational films for non-broadcast use has been limited contractual and other considerations, although possibilities for wider use have been und study. In March 1970, the CBC announced the signing of an agreement for the d tribution of selected English-language television programs throughout North Americ Under the terms of the agreement, CBC programs for educational and non-theatrical u in Canada will be made available for sale through the Visual Education Centre in Toron and, for markets in the United States, Puerto Rico and Mexico, through Public Media In of Wilmette, Illinois.

Various CBC recordings of serious and popular music have been made available f public sale by arrangement with commercial recording companies. They are distribut through record stores and the usual retail outlets. In 1970 in a similar co-operative ventu commercial recordings were issued based on the CBC's popular pre-school television seri "Friendly Giant" and "Mr. Dress-Up".

Section 3.—The Canada Council

The Canada Council was created in 1957 by an Act of Parliament, to "foster a promote the study and enjoyment of, and the production of works in the arts, humaniti and social sciences". It carries out its task mainly through a broad program of fellowshi and grants of various types. It also shares responsibility for Canada's cultural relatio with other countries in co-operation with the Department of External Affairs.

The Council is made up of a chairman, a vice-chairman and 19 members, all appoint by the Governor in Council. It meets at least five times a year. Its administration headed by a director and an associate director, also appointed by the Governor in Counc Within the limits of the Canada Council Act, the Council enjoys a large measure of auto omy, setting its own policies and developing and carrying out its own programs in co sultation with the community of artists and scholars. The Council reports to Parliame through the Secretary of State and also appears before such parliamentary committe as the Public Accounts Committee and the Standing Committee on Broadcasting, Fil and Assistance to the Arts.

Income.—The Council's income is derived from three sources: an annual grant of t Canadian Government which amounts to $24,200,000 for the year ended Mar. 31, 197 the Endowment Fund established by Parliament when it created the Council, which expected to yield $4,900,000; and private funds willed or donated to the Council and us in accordance with the wishes of the donors.

Assistance to the Arts, Humanities and Social Sciences.—The Council's assis ance to the arts amounted to $9,714,000 in 1969-70, of which $2,036,000 was used to finan some 900 bursaries and awards to individuals in the various art forms, and $7,382,000 w applied to grants to organizations including $2,007,000 for music, $2,566,000 for theatr $1,504,000 for dance and opera, $1,077,000 for the visual arts and $162,000 for writin and publication.

Assistance to the humanities and social sciences accounted for $17,757,000. I support of research training, the Council awarded 2,368 doctoral fellowships totallin $10,786,000; for research work, 135 leave fellowships totalling $1,018,000 and $4,282,0

in research grants; for research communication, a total of $796,000 in assistance to learned meetings, visiting professors, attendance of Canadian scholars at international conferences, and publication of learned journals and scholarly manuscripts.

Special Programs.—The Canada Council also administers, on behalf of the Canadian Government, part of a program of cultural exchanges with France, Belgium, Switzerland, the Federal Republic of Germany, Italy and the Netherlands. In 1969-70, it awarded fellowships and grants totalling $832,000 to citizens of these countries. The Council also administers the funds of the Canadian Cultural Institute in Rome, created in 1967 by an agreement between Canada and Italy. The Institute's annual income of some $25,000 is used to provide fellowships for Canadian artists and scholars wishing to work or study in Italy. The Izaak Walton Killam Memorial Awards of the Canada Council, another of its special programs, were inaugurated in 1967 with funds from the Killam estate. These awards go to support a few scholars of exceptional ability engaged in research projects of far-reaching significance. In 1969-70, there were 24 awards made under this program, totalling $525,000.

Prizes and Special Awards.—Under its power to "make awards to persons in Canada for outstanding accomplishments in the arts, humanities or social sciences", the Council annually awards the $15,000 prizes financed by a fund provided by the Molson Foundation. The amount of the fund was raised from $600,000 to $800,000 during 1969-70, thus enabling the Council to raise the number of annual awards from two to three. The Canada Council Medal, which served more or less the same purpose as the Molson Prizes, was abolished. Again in that year, the Governor General's Literary Awards, financed by the Council, were awarded to six Canadian writers.

UNESCO.—The Canada Council Act provides for certain functions in relation to the United Nations Educational, Scientific and Cultural Organization. It has accordingly established a National Commission for UNESCO and provides its secretariat and budget. As an agent of the Council, the Canadian Commission for UNESCO co-ordinates UNESCO program activities abroad and administers a modest program in furtherance of UNESCO objectives. In 1969-70, the Council spent approximately $200,000 through the National Commission for these purposes.

Section 4.—Provincial Assistance to Artists and Cultural Organizations

Provincial governments, as well as other levels of government and industry, have during the past few years become more and more aware of the significance of the arts in the life of the community. All provinces except Newfoundland, Prince Edward Island and Manitoba now give some form of financial assistance to artists (writers, poets, painters and sculptors), cultural organizations or community councils. The assistance provided by each province is described in the following paragraphs.

Nova Scotia.—This province has no specific legislation authorizing financial assistance for cultural advancement but the Department of Education and the Department of Finance and Economics give grants to a number of organizations and payments are made under the Provincial Finance Act from the departmental appropriations. In 1969, the largest grants given by the Department of Education went to the Halifax Symphony Orchestra, $33,150; the Army Museum, $7,000; the Glace Bay Miners' Museum, $7,000; the Nova Scotia College of Art, $6,500; the Neptune Theatre Foundation, $2,500; and the Canadian Opera Company, $2,000. Fifteen grants of from $300 to $800 each were given to other organizations interested in the preservation of historical artifacts, in folk arts and in music or drama. Department of Finance and Economics grants were given to the Neptune Theatre Foundation, $40,000; the Antigonish Highland Society, $20,000; the

Gaelic College of Celtic Folk Arts and Highland Home Crafts, $20,000; the Maritime Conservatory of Music, $7,500; the Nova Scotia Festival of the Arts, $4,000; the Nova Scotia Talent Trust, $2,000; the Annapolis Valley Apple Blossom Festival and the Cape Breton Youth Orchestra, $1,000 each; and the Acadian Festival Committee and the Halifax Music Festival, $300 each.

New Brunswick.—In March 1968, the Government of New Brunswick established an Office of Cultural Affairs, the function of which is to promote the study, enjoyment and production of the performing and visual arts, the literary arts and crafts; to assist, co-operate with and enlist the aid of organizations with similar objectives; and to provide grants, scholarships and bursaries for the study, research or development of the arts in the province. The Handicrafts Branch, which had been in operation since 1946 as part of the Department of Industry and Reconstruction, was incorporated into the new Office of Cultural Affairs. This Branch had been successful in stabilizing and developing several well-known cottage craft industries in New Brunswick and was involved in teaching crafts as a recreational activity. Under its present administration it hopes to promote more broadly the cultural aspect of the crafts by co-operating with other provincial craft organizations and the New Brunswick Craftsmen's Council in sponsoring craft exhibitions, seminars, workshops and classes on a regional basis.

In 1968-69, the province made direct grants totalling $37,350 to: the Atlantic Symphony, $10,000; the Sunbury Shores Arts and Nature Centre and the Fredericton Playhouse, $5,000 each; the Beauséjour Choir and the University of Moncton Choir, $3,000 each; the Academy of Ballet of New Brunswick, $1,000; and other music festivals or dramatic organizations, $200 to $750 each. Office of Cultural Affairs grants totalled $10,750, to: the University of Moncton Theatre, $2,000; the Sunbury Shores Arts and Nature Centre $1,500; the Saint John Arts Council, the University of New Brunswick Creative Arts Centre and the *Fiddlehead*, $1,000 each; and 11 other art, handicraft, ballet and historical organizations, $100 to $700 each. In each of the years 1968-69 and 1969-70, $5,000 was spent on paintings for the provincial collection.

In 1969, a conference was held on the state of the arts in New Brunswick, attended by 100 delegates. The 20 resolutions tabled, recommending steps that might be taken to advance interest in the arts, are under review by the Office of Cultural Affairs.

Quebec.—The Province of Quebec, through its Department of Cultural Affairs established in 1961, provides assistance to the arts in the form of awards, scholarships or grants to individuals and organizations. In the year ended Mar. 31, 1968, the amount expended for this purpose was $4,638,500, of which $427,500 was granted to individuals. There were 78 grants valued at a total of $210,000 given to individuals for creative projects; $90,000 was used to pay travelling and living expenses of individuals for study outside of Quebec or participation in international competitions, most of them working under the France–Quebec cultural agreement; $70,000 was given to assist authors with the publishing of research works and to purchase books directly from the author at full price; awards for literary excellence amounted to $22,500, including the $5,000 David Award which is Quebec's highest literary award, and seven $2,500 awards for works published during the preceding year; a $5,000 scientific award is made each year for a collection of research works or an exceptional accomplishment in the field of pure or applied science; and $30,000 was used to purchase 30 works of art from those displayed in competition (430 in 1967-68) to form part of the annual Artistic Competitions Exhibition or to be acquired by the Quebec Museum and the Contemporary Art Museum. Grants to organizations included: an amount of $25,000 to editors to assist them with their publications; $50,000 for the purchase of volumes for libraries or to be given as awards to students; $46,000 to associations of editors, librarians, writers, etc.; $75,000 to five plastic art organizations; $725,000 to 45 symphonic orchestras, choirs, bands and other musical organizations; $1,000,000 to 29 theatrical troupes and companies; $200,000 to 20 art and cultural centres; $1,500,000 to 114 public libraries; $145,000 to French-speaking organizations

cated outside Quebec in Canada and in the United States; $100,000 to seven French-nguage organizations working toward the improvement and extension of the French nguage; and $345,000 to 71 other cultural organizations.

Ontario.—The Ontario Government passed legislation in 1962 (SO 1962-63, c. 6) stablishing the Province of Ontario Council for the Arts, which consists of a chairman, vice-chairman and ten other members, all appointed by the Lieutenant-Governor in Council. It is the function of the Council to promote the study and enjoyment of and the roduction of works in the arts and to such end may (1) assist, co-operate with and enlist he aid of organizations whose objects are similar to the objects of the Council; (2) provide hrough appropriate organizations or otherwise for grants, scholarships or loans to persons n Ontario for study or research in the arts in Ontario or elsewhere or to persons in other rovinces or territories of Canada or any other countries for study or research in the arts n Ontario; and (3) make awards to persons in Ontario for outstanding accomplishments n the arts.

In the year ended Mar. 31, 1970, a total of $1,543,411 was dispensed by the Council n the form of grants or project assistance. Of that amount, $1,333,976 was given in rants to 89 organizations, the largest of them to the National Ballet Guild of Canada, 311,780; the Toronto Symphony Orchestra Association, $237,780; the Canadian Opera ompany, $146,440; the Stratford Shakespearean Festival, $85,000; and the Toronto Arts oundation, $51,000. Twenty-five projects were assisted, the largest amounts going to he Co-ordinated Arts Services, $50,000; the Dominion Drama Festival, $29,859; the ntario Federation of Symphony Orchestras, $27,019; Neighbourhood Programs, $18,261; nd the Arts Activity Centre, $11,967.

In addition, the Ontario Department of Energy and Resources contributed $89,400 oward the McMichael Conservation Collection of Art at Kleinburg; the Department of ublic Works purchased 29 works of art from Canadian painters, designers and sculptors t a cost of $330,000 for the Queen's Park office extension program; and the Department f University Affairs contributed $3,595,000 to the Royal Ontario Museum, $700,000 to he Art Gallery of Ontario and $800,000 to the Ontario College of Art.

Saskatchewan.—In 1949, the Saskatchewan Arts Board was established by Act of he legislature, its stated aim being "to provide opportunity for the people of that province o participate in visual art, music, drama, literature, handicrafts and other cultural pur-uits; to stimulate and encourage this participation and appreciation". The means of chieving these aims were left to the judgment of the Board. Over the years, handicraft nd visual art programs have been expanded to the point where in some areas they have eached the professional level. Workshops, lectures and seminars have been sponsored. highly successful Saskatchewan Summer School of the Arts offers courses, varying in ength from one to three weeks, in band, orchestra, choral singing, piping and drumming, ighland dancing, painting, pottery, acting, writing and weaving, under instruction by ighly qualified teachers. The annual Saskatchewan Festival of the Arts focuses attention n the arts by presenting top-calibre artistic performances and exhibitions.

In 1968, the Board granted financial assistance to students of the arts, enabling them o continue their studies at higher levels: amounts of from $400 to $1,500 each to 11 students n music; five grants of $1,200 each for study in drama; $302 to $1,500 to six students in isual art; and $180 to $225 to each of three students of ballet. Grants of from $300 to 15,500 were given to six music societies or groups; $1,000 to $10,000 to six theatrical groups; 19,000 in subsidies to community arts performances and exhibitions; $600 to $1,400 to ine arts councils; $900 to the Weyburn resident artist; and $1,500 to the Norman Mac-enzie Art Gallery.

Alberta.—The Cultural Development Branch of the Department of the Provincial ecretary of Alberta was begun after an Act of the legislature was passed in 1946 providing or "encouragement of the cultural development of the people of this Province". The

Act has since been amended several times to give it greater flexibility. The Branch is interested in the promotion of all forms of art. Its program is intended (1) to give opportunity to the public to witness the best in performing arts tours, exhibitions, etc., in order to gain their initial excitement and interest in the various modes and expressions in the arts; (2) to train community and other teachers so that that excitement and interest may be retained and fostered, with emphasis on in-service training for teachers in the public school system to be conducted at regular intervals and on special training for instructors at institutions, such as those for the mentally or physically handicapped or for older persons which have programs that develop arts according to the needs of the individual; (3) to provide consultative services for cultural organizations throughout the province; and (4) to give financial assistance to individuals, local amateur and professional institutions and provincial government organizations whose aims are the development of the arts. Awards to individuals wishing to further their training in some form of the arts amount to $50,000 annually. The budget of the Branch for the year ended Mar. 31, 1969 was over $1,000,000.

British Columbia.—The British Columbia Cultural Fund was set up by statute in 1967. That Act set aside $5,000,000 in an endowment-type fund, the interest from which was to be spent "for the stimulation of the cultural development of the people of the Province". In September of that year, an Advisory Committee was established to receive applications for cultural grants and to report their recommendations to the Department of Finance for the issuance of the necessary funds. In 1969, the amount of the endowment was raised to $10,000,000.

The Advisory Committee has encouraged the formation of community arts councils throughout the province which are representative of local and rural areas; 50 such councils have been formed with the result that local music organizations as well as other groups associated with visual and performing arts and crafts have received per capita assistance from the Fund; $42,500 was distributed for that purpose in 1967, $99,300 in 1968 and about $150,000 in 1969. Additional assistance is provided for major organizations, which received a total of $43,000 in 1967, $255,000 in 1968 and some $325,000 in 1969. For example in 1967 and 1968 the Vancouver International Festival received $65,000; in the three years 1967-69, the Vancouver Symphony Orchestra received $127,500, the Vancouver Opera Association $80,000, the Victoria Symphony Orchestra $47,000, Jeunesse Musicale $32,500, the B.C. Music Festival Association $25,000, the Victoria Conservatory of Music $20,500, the Junior Symphony of Vancouver $6,000, the Okanagan Symphony Orchestra $3,100 and the Vancouver Bach Choir $2,500; in 1968, the Nanaimo Symphony Orchestra received $1,600 and the Royal College of Organists $1,000.

Similar support is given in the field of drama and the performing arts. The major theatre organizations receiving grants in 1969 were: the Playhouse Centre of British Columbia, $40,000; the Metro Theatre of Vancouver, $25,000; the Bastion Theatre of Victoria $20,000; the B.C. Drama Association, $5,000; the National Theatre School, $2,500; and the Canadian Theatre Centre, $1,000. The Vancouver Art Gallery received $25,800 and the Art Gallery of Greater Victoria, $7,500.

Assistance is given to individuals applying for scholarships who have reached a level of ability entitling them to enrol in nationally or internationally accepted schools of dance, theatre or music. Assistance is also provided for British Columbia's native Indian population to enable them to undertake projects that would revive their historic culture in the areas of crafts, dance, music and language. A First Citizen's Perpetual Fund of $25,000,000 was established in 1969 which will permit greater emphasis to be placed on this program.

In addition, the Cultural Fund underwrites the costs of seminars for such organizations as the British Columbia Museums Association, the Canadian Federation of Music Teachers, the British Columbia Potters Guild and the Community Arts Council.

Section 5.—Library and Archive Services

Library Services

The National Library.—The National Library of Canada came into existence ormally on Jan. 1, 1953 by the proclamation of the National Library Act (RSC 1952, . 330). On the same date it absorbed the Canadian Bibliographic Centre, which had been ngaged in preliminary work and planning since 1950. The Library is now governed by he National Library Act, 1969, which broadened the powers of the National Librarian o whom is assigned the responsibility of co-ordinating government library services. The ct established a National Library Advisory Board consisting of 15 members.

The Library was housed for a long period in inadequate temporary quarters that mited its collections and activities. Construction of a permanent building, designed to ccommodate both the National Library and the Public Archives, began in 1963 and was ompleted in the spring of 1967. The new structure, which has a floor area of 13 acres nd was equipped initially with 81 miles of steel shelving, was opened formally by the rime Minister on June 20, 1967. The book collection now consists of more than 400,000 olumes, supplemented by microcopies of more than 100,000 additional titles. Newspaper les formerly in several locations have been brought together and now form the largest ollection of Canadian newspapers in Canada.

The Library compiles and publishes *Canadiana*, a monthly catalogue of new books and amphlets relating to Canada; 12,000 to 13,000 titles are listed each year.* *Canadiana* ncludes details of trade publications, official publications of the Government of Canada and he ten provinces, films, filmstrips and phonograph records produced in Canada.

The *National Union Catalogue* lists over 10,000,000 volumes in about 300 government, niversity, public and special libraries in all provinces. New accessions (which numbered ver 1,200,000 in 1969-70) are reported regularly, and the Union Catalogue thus forms a ontinuously up-to-date key to the main book resources of the country. During the year nded Mar. 31, 1970, the Reference Division was asked to locate more than 87,000 titles, nd it is noteworthy that copies of 75 p.c. of them were found in Canadian libraries.

The Library has published a union list of serials in the fields of the humanities and ocial sciences currently received by Canadian libraries. This list is a first step toward a omplete union list of such serials in the humanities and social sciences that will comple- ment the *Union List of Scientific Serials in Canadian Libraries* published by the National cience Library. The Library is also preparing for early publication a retrospective *Bibliography of Canadiana, 1867-1900*, which will list more than 25,000 titles.

The National Science Library.—The functions and services of the National Science ibrary, which is administered by the National Research Council Library, are described n Chapter VIII on Scientific and Industrial Research.

Public Libraries.—Public libraries in Canada are organized under provincial legis- ation which specifies the method of establishment, the services to be provided and the means of support. Municipalities may organize and maintain public libraries or join ogether to form regional libraries according to provincial legislation. Provincial public ibrary agencies advise local and regional libraries and distribute grants as provided.

Some recent developments in the advancement of library service may be of interest. The establishment of regional libraries continues throughout the country. In Ontario, 14 egional library systems cover the province; the four systems serving the northern part f the province have extended bookmobile service to a number of isolated communities. n Nova Scotia, eight regional libraries now serve 75 p.c. of the population of the province hrough 38 branch libraries in cities and towns and 11 bookmobiles which visit about 800

* A list of 400 selected titles of "Books About Canada", prepared by the National Library, appears in Chapter XXVII of this volume.

schools and communities. In Saskatchewan, the North Central Regional Library has beer joined recently by three Indian reserves, and Manitoba regional libraries have begun t lend reading materials to persons in senior citizens' homes as an added community service The Yukon Regional Library serves a population of 15,000, providing books to all schoo libraries except those in Whitehorse and Dawson. The Northwest Territories Public Library Services, with headquarters in Hay River, serves a widely scattered populatio of 31,000. Public library services in Newfoundland began to expand in 1968 as a result of substantial increase in provincial grants which enlarged the book budget by an amoun almost as large as the entire library grant for the preceding year. British Columbia take justifiable pride in the fact that the scientific and technical collection in its Vancouve public library has been rated by the National Research Council as one of the best in Canada The Prince Edward Island Department of Education, in an effort to attract professiona librarians to the province, offered a bursary of $1,000 to students in library science wh were willing to guarantee their services for a two-year period.

Bilingualism is assuming increasing importance in public libraries. Many librarie in English-speaking communities are increasing their holdings of French books and mat erials. Quebec libraries, in common with those in the other provinces, report a lively interest in weekly film and music presentations, art exhibits and library-sponsored tours

Table 1 gives summary results of the annual public library survey for 1968, wit comparable totals for 1966 and 1967. Book circulation was 88,586,493, or 5.7 per perso served. The current operating payments of all public libraries amounted to $46,844,260, o $2.99 per person served compared with $2.56 in the previous year. The full-time sta numbered 4,348 in 1968, of whom 970 or 22.3 p.c. were professional librarians.

1.—Summary Statistics for All Public Libraries, 1968, with Totals for 1966 and 1967

Province or Territory	Population Served	Libraries	Stocks of Books, Periodicals and Pamphlets	Circulation	Current Operating Payments	Full-Time Staff
	No.	No.	No.	No.	$	No.
Newfoundland	507,000	4	530,775	1,358,782	659,444	69
Prince Edward Island	110,000	1	113,129	176,839	89,105	7
Nova Scotia	547,477	14	621,007	2,185,809	1,847,547	129
New Brunswick	388,617	9	423,321	2,467,217	843,120	108
Quebec	3,443,628	103	3,555,955	7,772,320	5,170,499	484
Ontario	6,565,853	266	10,926,514	46,218,090	24,653,008	2,023
Manitoba	708,426	27	879,627	4,073,351	1,760,364	160
Saskatchewan	641,334	58	1,055,675	3,790,427	2,423,859	239
Alberta	1,086,293	152	2,074,702	7,336,590	3,608,761	394
British Columbia	1,609,085	80	2,765,687	13,207,068	5,555,189	722
Yukon Territory	15,000	1	50,074	..	95,364	4
Northwest Territories	31,000	1	12,336	..	138,000	9
Totals, 1968	**15,653,713**	**716**	**23,008,802**	**88,586,493**	**46,844,260**	**4,348**
1967	**16,100,496**	**855**	**21,634,868**	**81,788,829**	**41,153,985**	**3,838**
1966	**15,592,074**	**890**	**20,572,981**	**80,823,699**	**34,858,834**	**3,538**

University and College Libraries.—Libraries in 79 universities and colleges havin enrolments of 100 or more students reported, in 1968-69, a total of 25,999,563 volumes c 82.6 per student compared with 80.7 per student in 1967-68. Expenditures amounte to $184.63 per student, an increase of $4.24 over the previous year. The total full-tim staff of the libraries was 4,401, of whom 1,303 or 29.6 p.c. were professional librarian University and college libraries also reported increased stocks of films, film equipmen

microtext, recordings, projectors, maps, tapes and other forms of audio-visual materials as part of the resources of their research centres.

2.—Libraries in Universities and Colleges, by Province, Academic Year 1968-69, with Totals for 1966-67 and 1967-68

Province	Libraries	Library Holdings	Enrolment Served	Expenditures per Full-Time Student[1]
	No.	No.	No.	$
Newfoundland	1	401,690	5,734	163.06
Nova Scotia	9	1,235,432	14,104	178.55
New Brunswick	4	578,690	11,160	150.53
Quebec	14	5,024,402	75,623	145.84
Ontario	26	10,600,862	109,778	226.51
Manitoba	7	1,057,911	18,419	108.05
Saskatchewan	4	1,588,216	16,596	132.56
Alberta	6	1,952,907	27,297	199.20
British Columbia	8	3,559,453	36,055	206.85
Totals, 1968-69	**79**	**25,999,563**	**314,766**	**184.63**
1967-68	**79**	**22,106,157**	**273,966**	**180.39**
1966-67	**75**	**18,339,871**	**230,640**	**160.09**

[1]Full-time and equivalent.

School Libraries.—In 1968-69, 6,451 elementary and secondary schools with centralized libraries reported to the survey. Their total book stock was 23,988,913, or 7.9 books per pupil served. Payments for books and other library materials ranged from $1.00 per pupil served in New Brunswick to $7.57 in Ontario. The average for Canada was $5.97.

3.—Centralized School Libraries, by Province, School Year 1968-69, with Totals for 1966-67 and 1967-68

Province	Libraries	Books	Enrolment Served	Payment for Books per Pupil
	No.	No.	No.	$
Newfoundland	84	112,111	35,276	1.71
Prince Edward Island	8	23,033	4,379	1.46
Nova Scotia	119	251,250	67,126	1.26
New Brunswick	102	136,728	50,342	1.00
Quebec	1,363	5,160,237	664,979	4.38
Ontario	2,104	9,054,090	1,149,798	7.57
Manitoba	283	953,753	132,010	7.08
Saskatchewan	708	1,961,294	201,967	6.14
Alberta	758	2,806,194	311,000	5.30
British Columbia	922	3,529,323	426,399	5.83
Totals, 1968-69	**6,451**	**23,988,913**	**3,043,276**	**5.97**
1967-68	**5,188**	**16,086,228**	**2,466,567**	**5.45**
1966-67	**3,271**	**12,512,605**	**2,262,762**	**3.90**

Post-Secondary Institution Libraries.—Libraries in all institutions, community colleges and teachers colleges reporting to the survey showed a total book stock of 1,648,737 volumes. Current operating expenditures of the libraries amounted to $4,118,020 and a full-time staff of 400 was employed.

4.—Libraries in Post-Secondary Institutions, Academic Year 1968-69, with Totals for 1966-67 and 1967-68

Province	Institutions Reporting	Full-Time Enrolment	Volume of Books, Periodicals and Pamphlets	Staff	Total Operating Expenses
	No.	No.	No.	No.	$
Newfoundland	2	713	16,414	7	64,582
Nova Scotia	2	803	27,854	4	46,600
New Brunswick	3	1,227	21,765	4	40,910
Quebec	34	..	1,086,803	221	2,104,510
Ontario	33	29,164	414,073	122	1,421,739
Manitoba	3	1,224	16,316	12	89,360
Saskatchewan	1	623	12,822	5	47,400
Alberta	2	2,234	19,239	12	103,234
British Columbia	2	2,499	33,451	13	199,685
Totals, 1968-69	**82**	**38,487**	**1,648,737**	**400**	**4,118,020**
1967-68	**65**	**27,524**	**1,047,808**	**182**	**1,753,973**
1966-67	**89**	**34,852**	**336,979**	**79**	**721,732**

Librarian Education and Remuneration.—The seven library schools operating in Canada in 1969 awarded 484 Bachelor of Library Science and 106 Master of Library Science degrees. McGill University and the University of Western Ontario offer only the two-year course leading to a Master's degree; the University of Ottawa and the University of Toronto also offer the course leading to a Master's degree as well as the one-year program for the Bachelor's degree. Table 5 gives some pertinent information regarding the graduates who reported. Table 6 shows the median salaries of librarians in professional positions in 1968.

5.—Library School Graduates, 1969, with Totals for 1967 and 1968

Library School at—	Graduates Reporting[1]		Destinations				Median Beginning Salary
	Male	Female	Public Library	University Library	School Library	Special Library	
	No.	No.	No.	No.	No.	No.	$
B.L.S. Graduates—							
University of Montreal	34	44	10	22	13	19	7,200
University of Ottawa	16	23	1	15	4	2	7,300
University of Toronto	34	108	50	39	25	15	7,300
University of Alberta[2]	8	34	13	14	8	2	7,650
University of British Columbia	18	42	19	16	8	5	7,125
Totals, 1969	**110**	**251**	**93**	**106**	**58**	**43**	**7,250**
1968	**87**	**218**	**63**	**103**	**47**	**43**	**6,900**
1967	**127**	**144**	**48**	**93**	**30**	**39**	**6,600**
M.L.S. Graduates—							
McGill University	7	21	3	16	3	6	7,280
University of Toronto	4	8	3	8	—	1	8,850
University of Western Ontario[2]	11	16	1	10	1	2	7,500
Totals, 1969	**22**	**45**	**7**	**34**	**4**	**9**	**7,500**
1968	**11**	**24**	**2**	**25**	**2**	**6**	**7,215**
1967	**5**	**30**	**3**	**19**	**3**	**7**	**6,700**

[1] In addition, there were 162 other graduates who did not report. [2] Added in 1969.

6.—Median Salaries of Librarians in Professional Positions, 1968

Position	Public Libraries in Centres of Over 25,000 Population	Regional Public Libraries	Provincial Public Library Services	University and College Libraries (1968-69)
	$	$	$	$
Chief librarian	10,800	9,850	12,000	14,125
Assistant chief librarian	10,000	8,167	11,333	12,600
Division, department, or branch head	9,102	7,375	10,167	9,854
General librarian	7,470	6,619	8,167	7,763

The Public Archives

Provision for the creation of the Public Archives was first made by an Order in Council of June 20, 1872, which appointed an officer of the Department of Agriculture to take charge of historical archives. In 1903, the responsibility for old government records was transferred from the Secretary of State to the Department of Agriculture, and the head of the Archives was given the title of Dominion Archivist and Keeper of the Records. In 1912, the Archives became a separate department and was named Public Archives (SC 1911-12, c. 4, now RSC 1952, c. 222). The Public Archives has a dual role. As a research institution, it is responsible for acquiring from any source all significant documents relating to the development of the country and of value to Canada, and for providing suitable research services and facilities to make this material available to the public. As an essential part of the government administration, it has broad responsibilities in regard to the promotion of efficiency and economy in the management of its records.

The Historical Branch is comprised of four Divisions. The Manuscript Division contains manuscript collections and public records. The manuscript collections include private papers of statesmen and other distinguished citizens, records of cultural and commercial societies, and copies of records in France, England and other countries relating to Canada. The public records consist of selected records of all departments and agencies of the Government of Canada. The Picture Division has charge of documentary paintings, water colours, engravings and photographs relating to people, historical events, places and objects. It also has an extensive collection of films and sound recordings. The Map Division has custody of thousands of maps and plans pertaining to the discovery, exploration and settlement of this country and its topography, as well as a large collection of current topographical maps of foreign countries. The Library contains more than 80,000 volumes on Canadian history, including numerous pamphlets, periodicals and government publications.

Although documents in the Archives may not be taken out on loan, they may be consulted in the building, and a 24-hour-a-day service is provided for accredited research workers. Reproductions of available material may be obtained for a nominal fee on request and many of the documents in the Manuscript Division are on microfilm which may be obtained on inter-library loan.

The Records Management Branch assists departments and agencies in the setting up and operation of their records management programs. Its service also includes recommendations and advice on scheduling and disposal of records. At the Ottawa, Toronto and Montreal Records Centres it provides storage, reference service and planned disposal of dormant records on an economical basis. Other regional centres are being established in major cities across Canada.

The Administration and Technical Services Branch, in addition to an extensive conservation and restoration program, provides a technical and advisory service on microfilming to government departments and agencies. Microfilm work is done for departments at cost. It also provides a full range of services to the National Library.

Branch offices of the Public Archives are located in London, England, and Paris, France. The Archives also administers Laurier House as a historical museum.

CHAPTER VIII.—SCIENTIFIC AND INDUSTRIAL RESEARCH*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

Section 1.—Organization of and Expenditures on Scientific and Industrial Research in Canada

The organization and distribution of the research and development effort in Canad are partially the result of certain characteristic problems of this country, especially it large area, its relatively small population and peculiar population distribution, and it unusual industrial structure. However, there are indications that certain major shifts i the previous pattern of effort may be close at hand, caused by the emergence of organiza tions concerned with science policy questions and the recent general recognition of th growing importance of science and technology to modern society.

Early research in Canada was related mainly to the primary industries. Geologica mapping and agricultural research were almost the only areas of scientific activity unti the beginning of the present century. In 1898, research and development in the field o fisheries was assigned to an independent honorary board (the Biological Board) whic has continued to the present as the Fisheries Research Board. In 1916, the Federal Govern ment set up the National Research Council, the early duties of which were to encourag and stimulate research in the universities and industry. It later undertook researc activities with the establishment of its own laboratory system in the late 1920s and earl

* The introductory material appearing in the various Sections of this Chapter as well as Section 6 were prepare or revised by Dr. R. D. Voyer of the Science Council of Canada, and the statistical data were supplied by the Scienc Statistics Section, Business Finance Division, DBS. Departmental and agency information was prepared as ind cated.

30s. A great expansion in scientific research and development took place during the cond World War. The National Research Council assumed responsibility for research d development activity for the three Armed Services and for the development of atomic ergy. After the War, in 1947, the Defence Research Board was set up in the Depart- nt of National Defence to take over the responsibility for military research and devel- ment (see Chapter XXVI) and, in 1952, the Crown corporation Atomic Energy of nada Limited was established to proceed with the development of atomic energy in nada, and the National Research Council returned to its previous activities. Also, rtain other Crown corporations, such as Eldorado Mining and Refining Limited (now dorado Nuclear Limited), Polymer Corporation Limited, and Canada's largest national ility, the Canadian National Railways, developed important research programs. In 60 the Medical Research Council was established in association with the National Re- arch Council.

Until the 1950s, industrial research was slow to develop in Canada, although certain rge industries, particularly the chemical industry and the pulp and paper industry, had ng histories of successful research and development effort. Through the efforts of the dustrial companies themselves and by means of various government-sponsored incentive ograms, the industrial research and development effort in Canada has since grown and versified considerably. In addition, provincial research councils were set up both before d after the War in several provinces, usually for the general purpose of improving the ovinces' utilization of their resources and the production efficiency of their industries. these, the Ontario Research Foundation and B. C. Research (of the British Columbia search Council), although established under provincial legislation, are self-governing stitutions engaged in research and development on contract for manufacturers, depart- nts of government and on their own account, and derive their current revenue mainly m sponsored research. Furthermore, the Pulp and Paper Research Institute of Canada e Chapter XII, Section 3) is the one major research association that operates on a co- erative basis; its operating funds are provided by industry and its facilities by the Fed- l Government and McGill University, all three vitally interested in ensuring that s industry maintains its competitive position in world markets. Previously, the pri- ry resource base of industry generally was not conducive to the establishment of industrial search laboratories. As well, the degree of foreign ownership of manufacturing com- nies in Canada undoubtedly had some influence on the development of industrial research, ce Canadian subsidiaries of foreign companies had ready access to the research and velopment results of their parent companies. As a result of the consequent lack of centives, all but a few of these subsidiaries refrained from establishing their own labor- ories and from developing products specifically for the Canadian market. However, meet the challenge of competition from other countries in the production of sophisticated dern items of manufacture, Canadian industry has increased its own scientific and hnical investigations. The Sheridan Park Research Community, just outside Metro- litan Toronto, is an example of a recent concept for improving the efficiency of and panding industrial research in Canada. A somewhat similar but more diffuse develop- nt took place earlier at Pointe Claire, near Metropolitan Montreal. Industrial research ntres of this type facilitate applied research and development activities for the scientists d engineers involved by permitting ready interchange of non-proprietary scientific d technical information and access to a wide variety of instrumentation, equipment d skills. They also provide an attractive environment for skilled personnel, and thus rease Canada's potential for keeping its trained scientists and engineers. At Sheridan rk the research laboratories of nine individual companies are in full operation and there room for further corporate participants. A Conference Centre has been built and the mmunity members have formed an association to promote and expedite many other utually desirable arrangements.

A significant element in the training of scientists and engineers beyond the under- aduate level involves the research and development activities undertaken in the univer- ies as part of their program of graduate studies. These research and development

activities are related directly to the educational process and are of great importance in th training of the skilled personnel needed for the development of Canada's economy; the have a further importance in that they create centres of basic research in Canada an therefore act as listening posts tuned to the progress of science and technology in oth parts of the world.

Thus, there are three main sectors of research and development in Canada—researc and development in government, in industry and in the universities. These three elemen are covered in some detail in the remainder of this Chapter.

Mechanism for the Federal Science Policy.—In the federal sphere, the ultimat authority for policy on science resides in the Cabinet. To exercise this authority the was established by the Research Council Act (RSC 1952, c. 239, as amended) a Cabin committee known as the Committee of the Privy Council on Scientific and Industri Research. This Committee comprises those Cabinet Ministers having departments wit major scientific responsibilities and certain other Ministers who have an indirect conce with scientific affairs. These federal departments and agencies advise the Privy Counc Committee on the scientific aspects of their own departmental responsibilities and on th organization and support of research required for their own purposes. For many year the National Research Council, on the other hand, advised the Committee on gener science policy, particularly on research in the universities, in industry and in fields n specifically the responsibility of departments or agencies. Then, in 1949, the Privy Coun Committee broadened the structure of its advisory mechanism by the addition of an A visory Panel for Scientific Policy to which the Privy Council Committee could turn f joint advice on the formulation and conduct of government scientific policies. At th present time, the Advisory Panel consists of senior officials from the science-based depar ments and agencies, with the Clerk of the Privy Council as Chairman, and the Direct of the Science Secretariat as Vice-Chairman.

In 1964, as a result of the recommendations of the Royal Commission on Governme Organization, a Science Secretariat was created in the Privy Council Office with the tas of assembling and analysing information on the Government's scientific and technologic activities, as well as on those of industry, the universities and the provinces, particular in relation to the activities and concerns of the Federal Government. The Director the Science Secretariat, who is also chief science adviser to the Government, acts as secr tary to the Committee of the Privy Council on Scientific and Industrial Research. Th Science Secretariat has since also taken responsibility for advising the Department External Affairs on the selection of Counsellors (Scientific) for placement in certain Can dian embassies abroad, and on the distribution of reports received from these Counsellor

In 1966, the Federal Government established the Science Council of Canada, a Crow corporation with the duty of independently assessing Canada's scientific and technologic resources, requirements and potentialities and making recommendations thereon by th publication of reports. The Science Council is concerned both with research and develo ment and with the use of science and technology in the solution of Canada's social an economic problems. It reports to the Prime Minister and draws its membership fro industry, the universities and government. The Science Council has had, since 1968, i own executive arm. For the first two years of its existence, it received professional an administrative support from the Science Secretariat.

Since its formation, the Science Council has initiated intensive studies of science an technology in Canada in order to provide a basis for advice on the formulation of polici and plans for the future. It has published several reports based on background studi in several areas (e.g., the upper atmosphere and space, physics research, chemistry an chemical engineering, psychology, the proposal for an intensive neutron generator, Feder

overnment support of research in Canadian universities, and water resources research Canada). In addition, the Council has published its first science policy report in which recommends that Canada focus its scientific and technological effort through the creation Major Programs designed to help solve some of the country's social and economic prob-ms. These Programs include, among others, a space program for Canada, water resources anagement and development, transportation, urban development, computer applications d scientific and technological aid to developing areas of the world. The Science Council continuing its study of these and various other possible Major Programs from the view-ints of cost-benefit, organization, direction and funding.

In 1967, a Senate Committee on Science Policy was formed to consider and report the scientific policy of the Federal Government with the object of appraising its pri-ties, its organization, its budget and its efficiency. Several hearings have been held d the Committee intends to issue a report containing its findings in the near future.

In addition, as part of its studies of the national science policies of the individual ember countries, the Organization for Economic Co-operation and Development (OECD) s issued a comprehensive review of Canadian Science Policy which will be of help to those signing Canada's future science policy. This document is an extremely useful supple-ent to the present Chapter.

Research and Development Expenditures in Canada.—In the past decade, nada's gross expenditures on research and development (GERD) have more than ubled (Chart II) and government has remained the major source of research and develop-ent funds. In 1967, Canada's current expenditures on research and development nounted to about $690,000,000, divided as shown in Table **1**.

CHART I

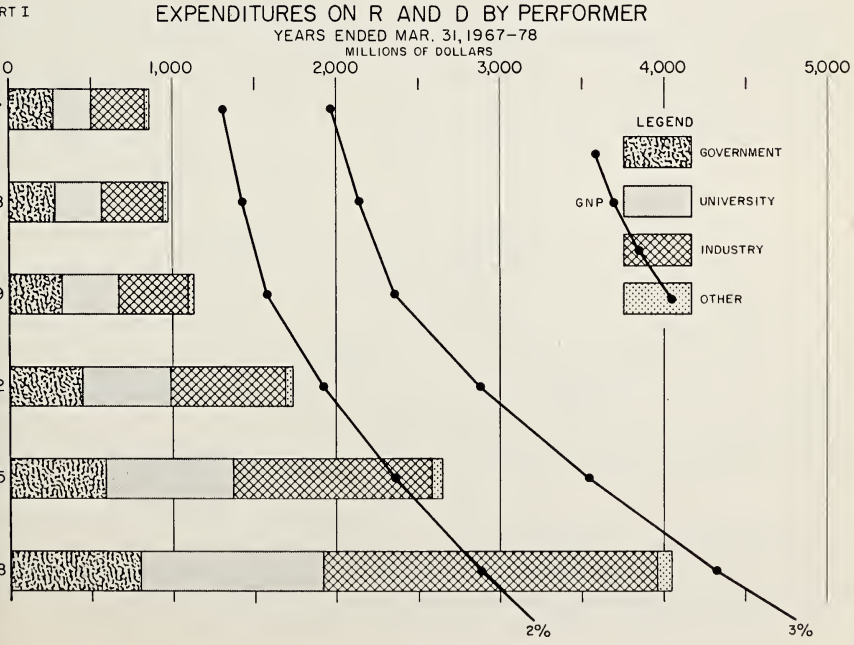


CHART II

GNP, GERD AND EXPENDITURES ON R AND D BY SECTOR

YEARS ENDED MAR. 31, 1957-67

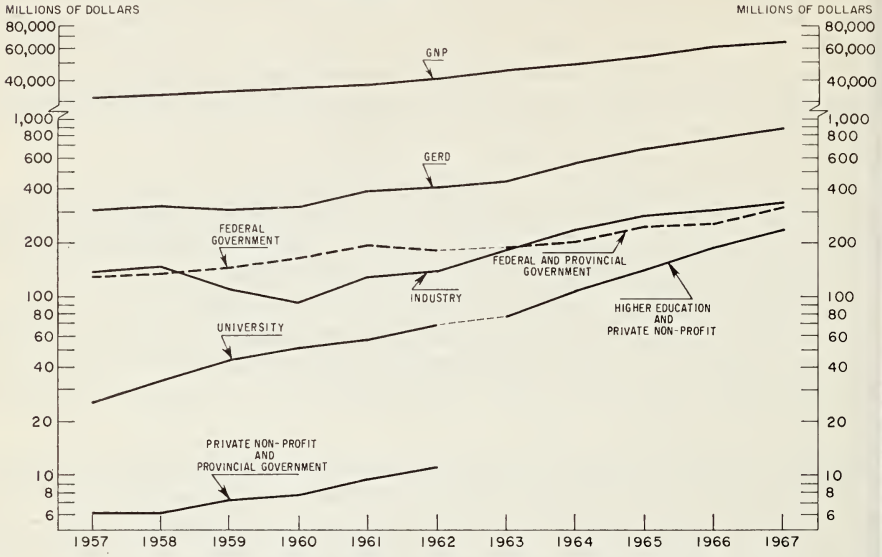
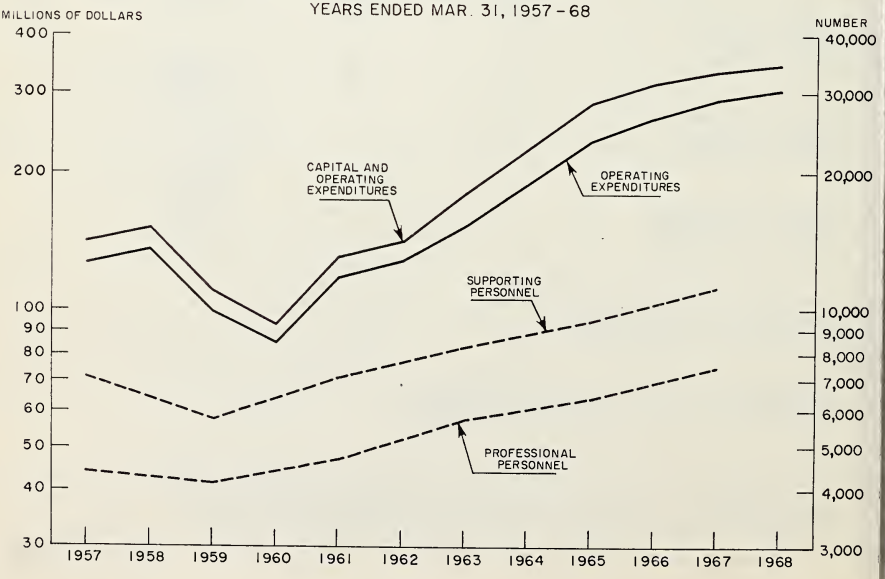


CHART III

GROWTH OF CANADIAN INDUSTRIAL RESEARCH AND DEVELOPMENT

YEARS ENDED MAR. 31, 1957-68



1.—Percentage Distribution of Current Expenditures on Research and Development, by Sector of Performance and by Type of Activity, 1967

Sector of Performance	Type of Activity			
	Basic Research	Applied Research	Development	Total
	p.c.	p.c.	p.c.	p.c.
overnment (all levels)	9	21	7	37
dustry	2	11	29	42
igher education[1]	12	6	3	21
Totals	**23**	**38**	**39**	**100**

[1] Includes a small amount of private non-profit research.

Section 2.—Scientific Research Expenditures by and Activities in Federal Government Organizations

Research activities in the various Federal Government departments and agencies have xpanded rapidly, at first because of the need for speeding up the production of raw mater- ls, which were long the basis of Canada's export trade, and later because of increasing terest in the processing of raw materials, the necessity of meeting the needs of national efence and the developing consideration for many human and resource requirements.

In Subsection 1 of this Section, which gives statistics of all Federal Government expen- itures on scientific research, the departments and agencies conducting such research are sted in Table 3, p. 468. Subsections 2 to 6 review the research activities of the National esearch Council, Atomic Energy of Canada Limited, certain research groups of the Depart- ent of Energy, Mines and Resources, the Department of Indian Affairs and Northern evelopment (except those of the Canadian Wildlife Service), and the Canadian Meteoro- gical Service. The research activities of other federal organizations are included along ith related data in the subject chapters, as follows: the scientific work of the Canadian Vildlife Service in Chapter I; of the Department of National Health and Welfare and the Iedical Research Council in Chapter VI; of the Canada Department of Agriculture in hapter XI; of the Canadian Forestry Service, Department of Fisheries and Forestry, in hapter XII; of the Fisheries Research Board, Department of Fisheries and Forestry, in hapter XIII; of the Mines Branch of the Department of Energy, Mines and Resources in hapter XIV; of the Board of Grain Commissioners in Chapter XXI; and of the Defence esearch Board in Chapter XXVI.

Subsection 1.—Expenditures by the Federal Government on Science

Information on the expenditures of the Federal Government for science is provided y annual surveys carried out by the DBS. Each survey covers the actual costs of the receding fiscal year and the estimated expenditures of the next two years on the scientific rograms of the reporting departments and agencies. At present, only activities in engi- eering and technology and in the physical and life sciences are included, although event- ally the surveys will be expanded to include the social sciences. For survey purposes, scientific activities" consist of research and development, scientific data collection, scien- fic information, testing and standardization, feasibility studies, and scientific scholarship rograms. Data are also collected on capital expenditures on plant for scientific activities nd on personnel employed in science.

Although the Government's expenditures on science have increased 30 p.c. during the eriod shown in Table 2, the annual rate of increase has fallen. For the three latest years he annual increases were 14 p.c., 8 p.c. and 6 p.c., respectively; the average annual growth rom 1963-64 was 16 p.c. Research and development continues to be the leading scientific ctivity, accounting for slightly over three quarters of all current expenditures on science.

Besides the R and D carried out within its own establishments, the Federal Government also provides important financial support for R and D performed in industry and the universities.

2.—Summary Statistics of Federal Government Expenditures on Science, Years Ended Mar. 31, 1968-71

Activity and Department or Agency	1967–68	1968–69	1969–70p	1970–71p
	$'000,000	$'000,000	$'000,000	$'000,000
Scientific Activity—				
Research and development	390.9	449.8	496.0	542.7
Scientific data collection	61.6	62.8	78.1	81.3
Scientific information	21.8	26.2	30.3	33.6
Testing and standardization	23.8	26.4	28.3	25.1
Feasibility studies	..	5.2	5.2	5.2
Scholarship programs	8.9	9.5	10.0	10.2
Capital expenditures	68.0	73.4	59.2	51.6
Totals, Scientific Activities	**575.0**	**653.4**	**707.0**	**749.7**
Department or Agency—				
Agriculture	52.9	61.7	63.4	61.7
Atomic Energy of Canada Limited	70.3	70.9	71.1	71.3
Energy, Mines and Resources	75.1	83.2	100.5	111.9
Fisheries and Forestry	48.7	57.8	62.1	60.6
Industry, Trade and Commerce	32.6	47.0	54.0	74.5
National Defence	86.3	85.5	81.3	79.6
National Research Council	111.1	126.1	134.0	135.6
Other departments and agencies	97.9	121.1	140.5	154.6

Table 3 shows the scientific expenditures of the major Federal Government departments and agencies. The National Research Council alone accounts for almost one fifth of the total expenditures; it provides more than half of the Government's direct support of science in the universities. The Department of Energy, Mines and Resources is the second largest spender on science. This Department and the other two major natural resource departments—Agriculture and Fisheries and Forestry—together represent almost one third of total expenditures. Expenditures on defence-oriented science have declined in the past few years to a little over one tenth of the total.

3.—Federal Government Expenditures on Science, by Department or Agency, Years Ended Mar. 31, 1969 and 1970

Department or Agency	1968–69				1969–70p			
	Current Expenditures on Research and Development	Current Expenditures on other Scientific Activities	Capital Expenditures	Total Funds Applied	Current Expenditures on Research and Development	Current Expenditures on other Scientific Activities	Capital Expenditures	Total Funds Applied
	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000
Agriculture	50.8	1.5	9.4	61.7	56.3	1.7	5.5	63.4
Atomic Energy of Canada Limited	57.9	2.0	11.0	70.9	59.4	2.7	9.0	71.1
Communications	9.0	0.3	1.0	10.3	9.4	0.3	2.1	11.8
Energy, Mines and Resources	26.6	42.7	13.9	83.2	31.9	52.9	15.7	100.5
Fisheries and Forestry	39.4	7.1	11.3	57.8	44.4	9.1	8.5	62.
Industry, Trade and Commerce	46.9	0.1	—	47.0	53.9	0.1	—	54.0
Medical Research Council	26.2	1.1	—	27.3	29.6	1.7	—	31.4
National Defence	53.4	20.1	12.0	85.5	51.8	21.6	7.9	81.3
National Health and Welfare	21.6	1.7	0.5	23.8	24.6	1.9	0.6	27.
National Research Council	101.0	19.9	5.2	126.1	109.6	20.5	3.9	134.0
Transport	4.6	25.6	7.3	37.5	5.6	30.6	4.8	41.0
Others	12.4	8.0	1.8	22.2	19.5	8.8	1.2	29.4
Totals, All Departments and Agencies	**449.8**	**130.2**	**73.4**	**653.4**	**496.0**	**151.8**	**59.2**	**707.0**

The Federal Government is the sole source of funds considered here but it is not the ole performer. Although most of the Government-funded research and development ontinues to be performed within its own establishments, the Government's support of utside research has increased noticeably during the past few years. In 1963-64, about 2 p.c. of the current expenditures were for intramural R and D; in 1970-71, this proportion s expected to fall to about 56 p.c. The share of Canadian industry has fluctuated; on he average this sector receives about 18 p.c. of the total Government support of current R and D.

During the four years shown in Table 4, the Department of Industry, Trade and Commerce was the largest single source of support for industrial R and D. It now disburses bout 65 p.c. of the total. The educational sector has received the greatest increase in Government support. Between 1963-64 and 1970-71 its share of total Government expenditures on R and D rose from 11 p.c. to 23 p.c.; for the past four years it has received more unds than the industrial sector. The National Research Council is the most important ource of funds, contributing almost half of the total. Most of the other funds are for nedical research from the Medical Research Council and the Department of National Health and Welfare.

4.—Federal Government Current Expenditures on Research and Development, Years Ended Mar. 31, 1968-71

Performing Organization	1967–68	1968–69	1969–70[p]	1970–71[p]
	$'000,000	$'000,000	$'000,000	$'000,000
Federal Government	242.2	261.1	287.8	301.7
Canadian industry[1]	63.0	78.1	80.8	110.0
Canadian educational and non-profit institutions[1]	81.6	103.1	120.6	125.8
Other[2]	3.8	7.5	6.8	5.2
Totals, Expenditures	**390.6**	**449.8**	**496.0**	**542.7**

[1] Funds received may be used for the capital projects of the recipients. [2] Including provincial governments nd foreign recipients.

It is estimated that a full-time equivalent of about 17,300 persons was engaged in Government intramural research and development in 1969-70. Of these, nearly 5,000 were cientists or engineers. At the same time, an equivalent of 6,200 persons was working in he related scientific activities (data collection, information, testing and standardization, easibility studies, etc.) and, of these, only about 1,250 were scientists or engineers. Atomic Energy of Canada Limited, the National Research Council, and the Departments of Agriculture, Fisheries and Forestry and Energy, Mines and Resources employed about 80 p.c. of the scientists and engineers and nearly 85 p.c. of the supporting personnel engaged in research and development.

Subsection 2.—The National Research Council of Canada*

Organized research in Canada on a national basis dates from 1916 when the Federal Government established the National Research Council. Through the years, changes have taken place in organization and functions as the Council's activities have increased. Today, most of its 10 divisions are located on a 400-acre site just east of Ottawa on the Montreal Road. A Prairie Regional Laboratory is located on the campus of the University of Saskatchewan in Saskatoon and an Atlantic Regional Laboratory on the campus of Dalhousie University in Halifax. Of the Council's 1969-70 appropriation of $133,000,000, about $65,000,000 was used for scholarships and grants, $47,000,000 for the operation of

* Prepared by Mrs. Joan Powers Rickerd, Information Services, National Research Council, Ottawa. The historical development of the Council is outlined in the 1969 Year Book, pp. 388-389.

the laboratories and $6,200,000 for the Industrial Research Assistance Program (see p. 477). In 1970 it had a staff of some 3,400 of whom 500 held the doctorate degree, some 40 associate committees and, in the year ended Mar. 31, 1970, supported about 4,400 university scientists and awarded about 2,600 scholarships, bursaries and post-doctorate fellowships.

NRC Organization.—The National Research Council Act (RSC 1952, c. 239, as amended) assigns to the Council but does not limit it to the following functions: (1) utilization of Canada's natural resources; (2) utilization of technical methods and processes used in Canadian industry; (3) maintenance and improvement of the primary physical standards of measurement for Canada; (4) standardization of the quality of material used in public works and of scientific and technical apparatus used in Canadian industry and government; (5) the fostering and carrying out of scientific and industrial research through operation of research laboratories, financial assistance for research activities in Canadian universities, financial assistance and promotion of research in industry, and operation of the National Science Library and the Technical Information Services.

The Council consists of the President, the Vice-President (Administration), two Vice-Presidents (Scientific) and not more than 17 other members appointed by the Governor in Council. The Council is a body corporate and is required to meet at least three times a year. It is responsible to a designated Minister of the Crown, who is a member of the Committee of the Privy Council on Scientific and Industrial Research. Except for the four permanent officers, Council members are appointed for a term of three years and serve without salary. They are drawn from the senior staff of universities, industry and labour in an attempt to achieve a broad base of advice, as to both scientific discipline and regional representation.

The President, who is the chief executive officer, is assisted by an Executive Assistant and a Délégué Général. The Délégué Général, assisted by a small group of scientists, engineers and economists, is in charge of the formulation of long-range policies and plans both for the research activities of NRC laboratories and for the support and encouragement of research in universities and in industry; for analyses of existing and alternative NRC projects and programs, taking into account both the scientific and economic aspects; and, in general, facilitating the task of identifying NRC priorities in terms of national needs.

One Vice-President (Scientific) is responsible for industrial research assistance and promotion, and the other for the Council's awards program for support of university research. The Vice-President (Administration) is responsible for financial, personnel and administrative services as well as for the National Science Library, the Computation Centre and the Canadian Journals of Research.

The Laboratories of the Council, under the jurisdiction of the Executive Director (Laboratories), are organized into 10 divisions: the biochemistry laboratory, biology laboratory, physics, chemistry, building research, mechanical engineering, radio and electrical engineering, the National Aeronautical Establishment, the Atlantic Regional Laboratory and the Prairie Regional Laboratory.

On Apr. 1, 1970, the Government announced that federal research in astronomy would be consolidated under the National Research Council. The Council will be responsible for the operation of the Dominion Astrophysical Observatory, Victoria, B.C., and the Dominion Radio Astrophysical Observatory, Penticton, B.C. Also involved in the transfer are the Time Service of Canada, the solar and meteor programs of the Dominion Observatory in Ottawa, and the Meteorite Observation and Recovery Project which is a network of photographic stations with headquarters in Saskatoon, Sask.

NRC Research Activity.—The NRC laboratories carry out long-term, applied and specific project research work, largely industrially oriented although some programs are directed toward important national and regional problems and toward more basic and exploratory back-up research. Quite a number of research projects are carried out on behalf of other government departments and agencies and a considerable amount of staff time is given to consulting on technical problems. Additionally, some research projects

e undertaken to solve a particular problem, or because of their potential for basically new chnology. When successful, the desired end result is the transfer of the new technology productive channels in Canadian industry. New industries based on NRC-developed chnology are beginning to be established, some located in large industrial centres and me in the Ottawa–Hull metropolitan area where they can maintain close contact with RC laboratories and take advantage of the new technology generated by the laboratories the Defence Research Board and Atomic Energy of Canada Limited, and of the subntial research activities of several industrial firms in the area.

Research in the *Biology Laboratory* is focused in three main areas—food biology, vironmental biology and radiation biology. In food biology, objectives are to study the onomic production of cells or cell metabolites, and to determine the cause of loss in ality of meats, poultry and vegetables during freezing and storage. Environmental udies give close attention to the transfer of biocides through food chains, the subsequent nger to the biosphere, and the effects of exposure to cold, changes in light, diet, etc., on imals, particularly those exposed to biocides. Intensive study of radiation is important a nuclear world, with emphasis particularly on finding therapeutic measures to prevent ckness or even death of irradiated animals. Physical and chemical changes in organic olecules by radiation of various kinds are being studied to learn more about their effects living things and about the conversion of radiation energy into chemical energy by ants. The Biochemistry Laboratory studies biological systems at the molecular level it the Biology Laboratory is more concerned with whole organisms, cells, and their vironments. Although these two programs differ in approach, the techniques used are nilar, thus permitting the common use of major facilities.

The primary concern of the *Division of Building Research* is to provide a comprehensive search service for the construction industry of Canada so that its program covers various pects of construction, building design, building materials and components, fire research, d studies in soil, snow and ice mechanics, and it serves as the technical research wing of e Central Mortgage and Housing Corporation. Regional stations are located at Halifax, .S., Saskatoon, Sask., and Vancouver, B.C., an Information Office at Toronto and field ations at Thompson, Man., and Inuvik, N.W.T. Division projects are concerned with: e behaviour of cement, concrete, mortars, plasters, plastics and sealing and caulking mpounds; atmospheric corrosion of metals and paint research; acoustics research; the rformance of foundations, walls, windows and roofs; humidity in buildings; air-conditiong design; snow and wind loads on structures; the properties of various soil types including rmafrost and muskeg; and the effects on buildings of ground vibrations caused by earthakes. A fire research laboratory contains facilities for studying the initiation, develop-ent and extinguishment of building fires as well as for fire tests on materials and structures.

Much of the work concerns the performance of buildings and building materials in cold eather. Double-glazed windows and lightweight metal and glass curtain walls have been amined, improvement of winter building techniques has been studied, and the work of e section is devoted to problems of building in the Far North. Educational work is nducted to alert designers, manufacturers and federal and provincial public works depart-ents to new principles and new information. Results of the Division's research are used the improvement of the National Building Code, an advisory document offered as a odel building by-law, and used by most of the municipalities of Canada.

The *Division of Chemistry* is concerned with supplying new scientific information for e development of Canada's natural resources and chemical industries. Most of its work devoted to basic studies, although these often produce practical results. For instance, long-term investigation on the contacting of fluids and solids resulted in a successful mmercial operation for drying grain. The same method has been extended to chemical actions and to removing liquids from other materials. Another long-term project of nsiderable industrial potential concerns the factors responsible for the stability, or the struction, of suspensions of solids in liquids and a method has been devised for easily parating almost any suspended solid from the liquid surrounding it. The same technique

can be used to prepare dense spherical agglomerates of selected composition. Work
separation processes has been expanded to include the separation of dissolved solids.
has been shown that virtually all dissolved salts can be removed from water by filtrati
through an appropriate medium, and tests with other materials are in progress. Then, to
the study of chemical reactions at very high pressures has resulted in the successful pr
paration of a stable polymer that could not be produced by conventional means. T
development of a procedure for anodically depositing metal oxide films resulted from lon
term studies on metallic corrosion.

The 11 sections of the Division are: analytical chemistry, chemical engineering, coll
chemistry, high polymer chemistry, high pressure, kinetics and catalysis, metallic corrosi
and oxidation, metallurgical chemistry, physical organic chemistry, hydrocarbon chemist
and textile chemistry. Much of the work falls under the general headings of petroleu
or metal chemistry, in that several sections work on topics related to one of these fiel

The Division has a small permanent staff that works, in collaboration with about
young post-doctorate fellows from all over the world, on long-term fundamental investig
tions in organic, physical and theoretical chemistry designed to provide new basic kno
ledge. The work in organic chemistry includes investigations of the structures of alk
loids, studies of the infrared spectra of steroids, and the synthesis of nucleic acids, p
phyrins and compounds labelled with isotopes. Other groups deal with chemical kinet
and photochemistry, the study of the ionization potentials of free radicals by mass spectr
metry, Raman and infrared vibrational spectroscopy, organic crystal semi-conducto
and the application of high resolution proton magnetic resonance techniques to the stu
of hydrogen bonding and other molecular interactions. Still others investigate the thern
properties of simple solids, the heats of micellization by microcalorimetry, and the thern
dynamics and stress-strain relationships associated with the adsorption of fluids by acti
carbons. Theoretical studies cover quantum-mechanical and many-body problems.

The general work of the *Division of Mechanical Engineering* is related to the thern
dynamic aspects of engineering production by conventional machinery and by app
cation of fluid mechanical principles to the generation of extreme temperatures in hig
pressure gases. In support of the human contribution to higher productivity, anoth
general body of work relates to the behaviour of the human operator—his dexterity a
capability and the effects on his performance of fatigue, lack of sleep, and alcohol. T
more specific activities of the Division are related to processes of production and to tra
portation.

In view of the importance in Canada of the lumbering industry and also of the ec
omic advantages of saving waste, some work is in hand to assess the sawing of lumber
means of high-pressure water jets. In the manufacturing aspects of mechanical engine
ing, the Division has long been active in the study of problems—both thermodynamic a
mechanical—encountered in different kinds of heat engines and is now concentrating
diesel engines and gas turbines. Its experimental shops have introduced improveme
and refinements in a number of manufacturing processes, such as the precision grind
of gearing and electrodischarge and electrochemical machining. As a subsidiary part
the work on manufacturing techniques, the Division has in hand a substantial body
development work related to the improvement of surgical instruments and apparatus,
first of which is now going into commercial production. Because many of its facilities
not duplicated elsewhere in Canada, it is part of the Division's working policy to as
manufacturers in the testing of a great variety of products.

Because the dimensions, topography and trade patterns of Canada render all forms
transportation of primary consequence to the economic and social well-being of the count
there has been, for a number of years, substantial research activity in this direction. T
land transport work has arisen from problems with urban bus systems and from proble
(mostly mechanical) arising from railway operations. Programs are under way or co
pleted relating to the operation of diesel locomotives on a wider range of fuels, to the

ovement of air brake operation in winter, to the braking and running smoothness of long ains and, recently, to the improvement of remote switching necessary for Central Traffic ntrol.

In the area of sea transport, the Division is concerned with ship design and canal and rbour facilities. In the former category, a steady procession of new designs passes rough the Ship Laboratory for investigation of hull lines, propeller design, steering and gh water characteristics, supplemented by work at sea on the stresses on ships due to nning in rough water. Regarding the improvement of harbours, work is under way on model of the St. Lawrence River extending from Montreal to Father Point, the object of ich is to lend the maximum possible scientific impetus to the development of the Port Montreal.

In the field of air transport, the problem confronting Canadian manufacturers is the ection of types of aircraft which can be sold in sufficient numbers in world markets to stify the development costs. The activities of the Division are concentrated on acquir- g a reasonably wide-based knowledge of the possible machinery arrangements for civil rtical take-off aircraft, which are believed to represent one of the great aeronautical portunities of the future.

The *National Aeronautical Establishment* conducts aeronautical research to meet the eds of military and civil aviation, working in co-operation with the Canadian aircraft dustry; it also carries out its own research program. Its studies therefore centre around oblems of aerodynamics, aircraft structures and materials, and flight mechanics. It s the only development wind tunnel facilities in Canada and is thus equipped to handle ost of the industrial or military aircraft developments of the foreseeable future. Aero- namics research from low speeds up to about 17 times the speed of sound is carried out the wind tunnels; considerable attention is being given at present to low-speed problems vertical and short take-off aircraft. Other studies include work on the aerodynamic aracteristics of high-thrust propellers, on wings with submerged fans and on wings mersed in powerful slip-streams. The research on structures and materials involves vestigation of aircraft accidents, the theory of structures, fatigue and fracture, flight ads statistics and aircraft hydraulics. The flight mechanics program covers research flight safety and flying stability and control, the development of a crash position in- cator for locating crashed aircraft, atmospheric physics, and anti-submarine magne- metry.

A growing and highly diversified program of assistance to smaller industries is de- loping, the work relating mainly to product development, improvement or testing. ncerning aircraft utilization, efforts have been directed toward those areas of national tivity where aerial methods might offer economies in cost or improvements in effective- ss, such as agricultural applications, forest fire fighting, aerial logging, high sensitivity agnetic surveys, precipitation physics, and studies of atmospheric turbulence.

The work of the *Radio and Electrical Engineering Division* includes engineering projects interest to Canadian industry and fundamental research in electrical science. The gineering program in the high-voltage field includes studies of corona loss and radio terference from direct-current transmission lines, and the development of current com- rators for very accurate measurement of current and voltage ratios. Assistance is ven to industry in the design, production and evaluation of new equipment, and in the lution of such problems as the design of antennas, microwave film and paper dryers, and ectronic aids to navigation. A recently developed radar altimeter to be used in taking ventory of forests by photogrammetry has been adapted, at the request of the UN Food d Agriculture Organization, for use in tropical rain forests.

In the field of bio-medical engineering, new techniques in electrocardiography that ve been successfully tested in clinical practice will allow reliable monitoring of a fetal artbeat. The Division has co-operated with members of the medical profession in the tablishment of safety standards in the use of electronic treatment and diagnostic equip- ent in hospitals.

With the increasing use of computers in all branches of science, the Division h become increasingly concerned with the development of computer techniques and the many applications, such as those related to the problem of communication between m and machine and the application of computers to education. A computer-aided teachi system has been developed, as well as a course unit for beginning geography students test the usefulness of the system.

Facilities at the Algonquin Radio Observatory, completed in 1966, include a mult element interferometer used for solar observations, and the 150-foot parabolic radio tel scope. Astronomical measurements have been made with this telescope with a degree accuracy not hitherto attainable, and many observation programs have been initiated the observatory by NRC scientists and by astronomers from Canadian and foreign u versities. Fundamental studies are also carried out in the fields of upper atmosphe research, wave propagation, solid state physics, and the behaviour of particles at ultr high vacuum.

The work in the *Division of Physics* is divided between research in fields of physi deemed most likely to contribute in a practical way to the Canadian economy and resear to improve the accuracy and precision of fundamental physical standards on which measurements are based. The Division has primary standards equal to any in the wor in the fields of mass, length, time, electricity, temperature, photometry and radiatio The sections of the Division are: acoustics, diffraction optics, electricity, heat and sol state physics, high temperature physics, instrumental optics, optical physics, mechanic photogrammetric research, radiation optics, and X-rays and nuclear radiations.

Examples of specific projects under way include: a study of physiological noise and i relationship with the threshold of hearing, resulting in the development of a new pro microphone which should find wide application in sound measurement; new precision a accuracy are envisaged for audiometers of great importance in connection with heari loss in industry and elsewhere; researches directed toward improving the resolving pow of optical systems, the design of a hydrogen maser offering potential as a frequency stan ard for defining time, measurements on various metals and ceramics aimed at elucidati the mechanism of heat transfer at high temperatures, the establishment of an internation standard neutron source, and investigation and application of the very intense and ve monochromatic radiation emitted by gas lasers. Several of the Division's developmen are being produced commercially; among these are noise-excluding ear defenders, a rev lutionary analytical plotter for making maps from aerial photographs (for military or f civilian use), six- and five-figure potentiometers, a precision direct reading thermomet bridge, an instrument for measurement of resistance to a precision of one part per millio and a new instrument for measuring more accurately and quickly electrical voltages of to 3,000 volts.

To permit standardization of X-rays and nuclear radiations at higher energies and f general research in the energy range, the Division has installed a 4-MeV Van de Gra generator and a 40-MeV linac facility.

Investigations are also under way on cosmic rays and high-energy particle physi solid state physics, laser and plasma physics, spectroscopy and X-ray diffraction. T work is on fundamental problems that do not have immediate application but advance t frontiers of knowledge and supply the basis for further progress in the applied fields. A vances in the study of cosmic rays and energetic particles are being made by means of specially designed instrument package operating aboard the Canadian earth satelli *Alouette II*. The package is sending back vital new information about the Van All radiation belts and about the artificial belts created by atomic explosions.

The solid state group studies the electrical, thermal and mechanical properties metals and semi-conductors, especially at very low temperatures. The laser and plasr physics group has recently made an important contribution by observing the scatteri of a ruby-maser beam by a plasma; this study leads to a determination of electron temper

ure and electron concentration. In the spectroscopy group, the structures of atoms and nolecules are investigated by means of their microwave, visible and ultra-violet spectra, nd considerable work has been done on optical masers.

The X-ray diffraction laboratory undertakes fundamental work in molecular and rystal structure and identification problems for government laboratories. Two of the najor projects concern narcotics and vanadium minerals. X-ray diffraction methods are xtremely valuable for identification purposes as they are non-destructive and require only ery small amounts of material.

The *Atlantic Regional Laboratory* at Halifax in Nova Scotia is engaged in practical and ndamental studies in chemistry and biology related to the resources and industries of ne Atlantic Provinces. Such studies include investigations of: the biochemistry and hysiology of marine algae, fungi, bacteria, lichens, mosses and higher plants; the chemistry f naturally occurring organic compounds; and the physical chemistry of inorganic com- ounds at high temperatures. A major objective is to develop varieties of seaweeds with nhanced commercial value and to investigate the growth and cultivation of seaweeds and ther marine algae. Surveys are being made to reveal new sources of seaweeds. An pplied project on toxic microfungi in pastures is being carried out in collaboration with he Canada Department of Agriculture at Nappan, N.S. Fundamental studies on inor- anic reactions at high temperatures may be of value to the steel and glass-making indus- ries, and research in organic reactions, which includes work on methods of synthesis, may lso eventually have industrial value. Some of the work in biochemistry and physiology s related to medicinally important compounds such as antibiotics and drugs that affect nental processes.

One of the aims of the *Prairie Regional Laboratory* at Saskatoon in Saskatchewan is o develop wider uses for crops grown on the prairies. The Laboratory program is carried ut by five sections: physiology and biochemistry of fungi, physiology and biochemistry of acteria, plant biochemistry, chemistry of natural products, and engineering and process evelopment. Research is therefore carried out on the properties and reactions of plant omponents, and on the biological, chemical and engineering processes for turning them nto other compounds. The development of oil-seed crops as alternatives to seed crops as received considerable attention.

ts at the Prairie Region- oratory have developed tool for the identifica- plants through chemo- my, the study of charac- chemical compounds in o correlate their species. search has a valuable al in the solving of some practical problems en- ed by the forestry in- —in detecting usable reforestation programs d in tree breeding.

For some time, the Laboratory has studied major plant constituents such as carbohydrates, protein, starch, lignin and fibres. An example of this work is the definition of the chemical structure of several polysaccharides found in cereal grains and important in baking, milling and fermentation technology. Attention is also being given to minor plant constituents, such as phenols, flavonoids and terpenes, which are known to have fungicidal and germicidal properties. A laboratory has been set up for the systematic study of extractives from local plants and shrubs.

Developments from the Laboratory attracting commercial interest are: the production of feed supplements by direct use of micro-organisms, and specific essential amino acids such as lysine; poly-hydroxy alcohols such as glycerol and arabitol; hydroxy fatty acids; and the possibilities of producing specific glyceride types using the enzyme systems of micro-organisms. The Laboratory works in co-operation with the Canada Department of Agriculture to help maintain Canada's position as the world's leading exporter of rapeseed, used to produce cooking oils, dressings and oil for use in margarine and shortening. A group working in the field of mycology is concerned with the production of new chemicals, antibiotics, alkaloids and amino acids.

The function of the *Space Research Facilities Branch* is to develop and provide facilities to meet the needs of the upper atmosphere and space research programs of Canadian scientists in universities and government agencies. At present its work is restricted primarily to the use of sounding rockets. The major facility is the Churchill Research Range which is operated for the benefit of Canadian and United States scientists and has a joint Canadian–United States funding. It has capabilities for launching many kinds of sounding rockets and balloons carrying scientific experiments to investigate the earth's upper atmosphere. Associated ground-based instruments are available to study the aurora borealis by photographic and spectro-photometric methods. There is also, for occasional use, a small launching facility at Resolute Bay in the Northwest Territories and temporary launch facilities are planned for other locations for use in studies associated with the eclipses of the sun in 1970 and 1972. The Branch also operates the satellite tracking and data reception station near St. John's in Newfoundland and the Great Whale Geophysical Station at Poste-de-la-Baleine in Quebec.

In the implementation of the sounding rocket program, the Branch is responsible for providing the vehicles and incorporating the scientific experiments into suitable payloads, with associated telemetry and other devices; this work is carried out mainly by industrial contracts. The work of the Branch also includes the reduction of flight data to provide vehicle trajectory and attitude information to experimenters, and the provision, from the telemetered information recorded on magnetic tape, of data required by individual scientists in any form desired.

University Research Support.—From its inception, the National Research Council has encouraged and supported research in Canadian universities. A system of postgraduate scholarships and post-doctorate fellowships gives assistance to students, Canadians and landed immigrants who have shown promise of research ability. The awards are: Post-doctorate Fellowships; Postgraduate Scholarships; Bursaries; 1967 Science Scholarships; Post Industrial Experience Research (PIER) Fellowships; and Postgraduate Scholarships in Science Librarianship and Documentation. Awards are for advanced studies and/or research in science and engineering and are competitive, with academic excellence being the main criterion in the selection of successful candidates. In addition, the Council in 1970 introduced a post-doctorate program for the support of research in Canadian industry; these Industrial Post-doctorate Fellowships are intended to encourage highly qualified science and engineering students to seek careers in industry.

Post-doctorate Fellowships and Industrial Post-doctorate Fellowships are awarded to candidates who have recently completed or who are about to complete their requirements for a doctorate degree. The purpose of the two programs is to enable those who have received a doctorate degree to undertake, prior to becoming permanently employed, post-

ctoral research for up to two years after receiving their degree. Post-doctorate Fellowps are tenable in Canadian universities and in universities and other institutions abroad; dustrial Post-doctorate Fellowships are tenable in industrial organizations in Canada.

Postgraduate Scholarships are awarded for tenure in Canada and a successful candidate y elect to carry out his program at the Canadian university of his choice; however, where ilities for a Ph.D. program are limited or lacking in Canada, the candidate may receive cial permission to hold his scholarships at a university abroad. The winner of an award a first year of graduate study has the option of deferring tenure of his scholarship for up two years to encourage him to investigate career opportunities in industry.

Canadian universities receive an annual quota of Bursaries from NRC and are responle for the selection of students for these awards. These awards are not transferable and tenable only at the university that nominated the student for the award.

The 1967 Science Scholarships, introduced to celebrate the centennial of Canadian nfederation and the 50th anniversary of NRC, are intended to encourage young men d women of outstanding intellectual promise to pursue postgraduate studies and research ding to doctorate degrees, as well as to stimulate exchanges of students between different ltural and geographical regions in Canada. Scholars must select for graduate studies a iversity other than the one from which their first degree was obtained.

Post Industrial Experience Research (PIER) Fellowships, introduced in 1966, ovide an opportunity for persons with industrial experience to gain additional research perience and training. A limited number are made available each year to candidates o have had not less than five years of industrial experience.

Postgraduate Scholarships in Science Librarianship and Documentation, introduced 1967, are intended to encourage graduates with a degree in science or engineering to come science librarians, documentalists or science information specialists in an effort to et the demand by universities, research laboratories, industrial firms and related organitions for properly qualified persons in this field.

Assistance to Industry.—The application of science to industry has been a major ncern of NRC since its founding. There is a constant flow of personnel and information tween NRC laboratories and those of industry, and roughly 70 p.c. of the Council's n effort involves applied research intended for industrial use. Contract research on ecific projects and a variety of testing and standardization work are undertaken. Intions from NRC laboratories are carried through the patent stage, then made available r manufacture through Canadian Patents and Development Limited, a subsidiary of RC.

In an effort to improve the co-ordination of the various agencies of government conrned with administration of industrial assistance programs, a study group has been rmed of the major participants, including the Department of Industry, Trade and Comerce, the Defence Research Board, the Department of Finance, the Treasury Board and RC. This group is active in its efforts to devise improved incentive programs. Staff embers of NRC have organized meetings with representatives of Canadian research anagement, and from these there is emerging a much clearer picture of the problems of dustrial research and development in Canada.

During seven years of operation, nearly $90,000,000 has been invested in the Industrial esearch Assistance Program (IRAP) administered by NRC, with industry contributing pproximately 58 p.c. of the total cost. During the fiscal year 1969-70, close to 100 manucturing companies participated in the program in which 700 scientists and engineers and substantial number of technicians were employed. The highest level of research activity ntinued to be in the chemical industries, followed by electrical, pharmaceutical, paper d allied products.

With the time interval between research discoveries and the appearance of an improved oduct in the market place measured in decades, it is too early to forecast the effect of

the program on the Canadian economy. The rate of growth of the IRAP in the early stage was governed by a shortage of senior scientists and research engineers, time needed to build laboratories and the share of company funds available to match government assistance. Recent reports from companies participating in the program reveal a considerable change with a substantial increase in staff, in the purchase of sophisticated research instruments and in capital expenditures which have more than doubled since the Program started.

The number of small companies applying for IRAP assistance is growing rapidly and there are a number of case histories showing that small companies can do highly successful research and development with the appropriate incentives. A close working relationship has been effected between the industry group, some 40 university professors in a consulting capacity, and approximately 100 scientists as advisers or liaison officers from government laboratories. This new link between industry, universities and government is improving communication and providing a feedback of industrial activities and requirements into the universities and government laboratories.

Technical Information Service.—NRC has a Technical Information Service (TIS) which was established in 1945 to help, on request, small secondary manufacturing industries to keep pace with advances in research and technology. TIS today maintains direct contact with industry through a system of field offices and provides, without cost, information and advice on technological matters.

The Industrial Engineering Section has nine industrial engineers in the field and three in Ottawa, who are applying their engineering knowledge to help small companies on a do-it-yourself basis in resolving their operating problems. This is done through information, guidance and assistance in the analysis of work situations, improvements in production processes and facilities, and implementation of systems by which management can operate and control production processes for optimum results.

The Technical Developments Section further facilitates the flow of technical information to Canadian industry. An experimental program is being carried out with the co-operation of some 3,000 companies each of which has provided TIS with a listing of its areas of industrial interest; these are matched by computer with the information items held by the Technical Developments Section and selected lists are issued to each company.

Engineers in the TIS field offices visit or contact thousands of small companies in every part of Canada and answer written or verbal enquiries numbering well over 10,000 a year. Problems requiring information in greater depth are referred to the Ottawa staff who draw upon experience with previous enquiries, the National Science Library, experts in government departments and industry, and foreign information services for suitable information which is forwarded to the enquirer, sometimes accompanied by suggested solutions to their problems.

The National Science Library.—Plans for developing a central scientific library were proposed as early as 1924 by the Honorary Advisory Council for Scientific and Industrial Research, established in 1916, now the National Research Council. The Library grew slowly until 1928 when temporary research laboratories were established near the present Sussex Drive building which was opened in 1932. Since then it has been developed to parallel the growth and expansion of the laboratories and the national interests and activities of the Council with the result that in 1953, under an agreement with the more recently established National Library, the National Research Council Library formally assumed responsibility for national library services in the fields of science and technology. This responsibility was confirmed by Act of Parliament in 1966 (SC 1966-67, c. 26). In 1967, the President of the Association of Canadian Medical Colleges recommended to the Government that responsibility for national services in the medical and health sciences be assigned to the National Science Library.

The National Science Library now serves as the focal point of a national scientific and chnical information network. Through co-operative measures with both national and ernational information agencies, its activities are designed to provide the Canadian entific and industrial communities with direct and immediate access to resources and vices not available locally. Increasing use is being made of computer and related elec- nic data processing equipment to organize, retrieve and expedite the dissemination of formation. One such service is a selective dissemination of information (SDI) system ailable on a regular (weekly or bi-weekly) subscription basis to Canadian scientists and gineers. The Library's collection, which is doubling in size every ten years, comprised proximately 760,000 volumes by the end of March 1969. Most of this material, including rnals and other serials, books, pamphlets and technical and research reports (many in croform), is housed in the main Library with smaller and more specialized collections in ht branch libraries.

The resources of the Library are made available by means of an extensive inter-library n and photocopying service. This service also identifies references to obscure publica- ns and, if necessary, attempts to locate holdings elsewhere in Canada or abroad. For rposes of current awareness, the Library issues twice a month its *Recent Additions to the rary*. *The Union List of Scientific Serials in Canadian Libraries*, prepared by the Library h the co-operation of other libraries in Canada, records the title, holdings and location approximately 40,000 scientific and technical journals received by over 200 libraries in nada. The data for this publication is stored on magnetic tape and updated regularly computer print-out as new editions are required.

Librarians trained in science or engineering and subject specialists provide a reference d research service to meet Canadian needs for information. Many inquiries require rrying out a literature search and preparing a list of relevant references. Other requests information may be answered from the staff's own knowledge or with advice from the entific and technical personnel of the Council and other government departments and encies.

The Canadian Index of Scientific Translations, a card index to the location in Canada or ewhere of translations of articles written in foreign languages, is maintained by the rary. Translations of scientific articles prepared by the Library's Translations Section listed and made available in Canada and abroad. A complete English translation of Russian journal *Problemy Severa* (*Problems of the North*) is also prepared by this Section. e National Science Library publishes the *Directory of Canadian Scientific and Technical riodicals*, *Conference Proceedings in the Health Sciences*, *Scientific and Technical Societies Canada*, *Scientific Policy*, *Research and Development in Canada* (a bibliography), and other blications related to its own activities.

In December 1969, the Government directed the National Research Council, under general direction of the National Librarian, to develop, in concert with existing infor- tion organizations, a national scientific and technical information system to encompass natural sciences and engineering and to appoint an advisory board of directors with ponsibility for formulating general policies and guidance toward their implementation.

Associate Committees.—NRC's associate committees provide an important instru- nt for studying, co-ordinating and promoting research on problems of national signi- ance. The members of these committees are experts in the different aspects and disci- nes related to the problem and are drawn from university, industry and government oratories. The committee studying a particular problem collects and collates the cessary information, delineates research problems, co-ordinates research and may initiate w research necessary to the solution of the problems. Each committee has defined jectives and when these are accomplished the committee is disbanded. Currently, re than 40 associate committees are operating in such diverse fields as aerodynamics,

dental research, bird hazards to aircraft, water pollution, paint research, plasma physics and soil and snow mechanics. Some associate committees also function as national committees for an international scientific union.

An Associate Committee on Scientific Criteria for Environmental Quality has been established by the Council to collate and publish an integrated set of scientific requirements on which an evaluation of the quality of the environment can be based. The criteria will be designed to assist those at the federal, provincial and municipal levels who have the responsibility for the formulation and enforcement of environmental quality standards.

International Affiliations.—NRC maintains a scientific liaison office in London, England, for the exchange of scientific information and also has a scientific exchange agreement with the Soviet Academy of Sciences that provides for visits of scientists ranging in duration from three weeks to nine months; the Council has accepted responsibility for exchange of Canadian scientists with France under the Cultural Agreement between the Governments of Canada and France, and an agreement on scientific exchanges has been concluded with Brazil.

In addition, NRC administers a number of international programs for exchanges of scientists and scientific information. It also supports Canadian membership in organizations such as the International Scientific Unions, helps to finance scientific congresses in Canada, and aids Canada's participation in world scientific projects.

Subsection 3.—Atomic Energy of Canada Limited*

Historically, Canada owes its current position as one of the five most advanced nations in atomic energy development to its uranium deposits exploited between the Wars for the production of radium. The switch during the Second World War to interest in uranium for nuclear weapons development, concurrently with the need for a base for the United Kingdom atomic energy research program, brought Canada into the tripartite council with the United States. Moreover, French scientists who had pioneered the idea of the heavy water natural uranium chain reactor were working with the United Kingdom team. Canada undertook jointly with them to develop the heavy water reactor for the production of plutonium. Based on pilot experiments with the ZEEP, a zero energy pile built at Chalk River, Ont., in 1945, the adjacent NRX reactor was built and came into operation in 1947. It was so successful that in 1949-50 both the United States program of giant heavy water production reactors at Savannah River and the combined research and production reactor, NRU, at Chalk River, were committed.

To conduct the growing program of atomic energy research and development involving reactor construction and operation and the production of isotopes, the Crown company Atomic Energy of Canada Limited (AECL), was formed in 1952 to take over the research from the National Research Council and the radio-isotope business from a sister Crown company, Eldorado Mining & Refining (1944) Limited. The direct cost of the NRX reactor did not exceed $10,000,000. The NRU reactor, completed in 1957, cost $58,000,000 but earned a revenue of over $30,000,000 from the sale of plutonium to the United States. Since 1951 these two main reactors at Chalk River have produced other isotopes for commercial sale, revenue from which has increased from about $500,000 in 1952 to over $10,000,000 a year.

In May 1970, a new, small nuclear reactor (called Slowpoke) with a wide range of possible applications was brought into operation at the Chalk River Nuclear Laboratories.

* Prepared by Dr. W. B. Lewis, Senior Vice-President, Atomic Energy of Canada Limited, Chalk River, On

CRNL). "Slowpoke" stands for Safe Low Power Critical Experiment. The core of he reactor, containing uranium fuel, is only nine inches in diameter and 10 inches high. Neutrons from it can be used in the activation analysis role to detect impurities in industrial and environmental materials, contributing to quality control and pollution control, respectively. It can also produce very short-lived radioactive isotopes for use as tracers nd for the treatment of some medical tumors. Another possible use is neutron radiography. The reactor is designed to be safe, reliable and maintenance-free, to turn off and n with the flick of a switch and to run for as long as 10 years without being re-charged ith fuel. Assuming it meets the economic and technical requirements, Slowpoke will be roduced and sold by AECL Commercial Products.

AECL is today the agency primarily responsible for research into atomic energy and its evelopment for peaceful purposes. Fundamental research has always been and continues o be the cornerstone of this development. However, there are avenues of research in the eld of atomic energy in which AECL plays little or no part. Its research and development effort is limited partly by the nature of the resources and facilities available to it and artly by its policy of concentrating these resources on the lines of investigation that appear o be most promising.

The largest and best known single AECL development is its nuclear power program, mploying the CANDU (Canadian Deuterium Uranium) power reactor. These reactors re fuelled with uranium and moderated with heavy water (deuterium oxide). Developed ut of the design and operating experience gained from its major research reactors, NRX nd NRU, CANDU reactors are capable of further development to meet the challenge of he competition from other designs for the foreseeable future. By 1978, the Canadian-esigned nuclear power generating capacity already committed will total over 6,000 megaatts (one megawatt = 1,000 kilowatts), and strong efforts are being made to interest ther countries in the purchase of nuclear power reactors of the CANDU type.

The second largest commercial business conducted by AECL is that of AECL Commercial Products in processing and marketing radioactive isotopes and the equipment for tilizing them. The successful efforts expended in developing new applications to increase he world-wide sales of isotopes have resulted in the design and construction of major radiation facilities for a growing list of industries and other users. These efforts demand omprehensive supporting services ranging from sophisticated engineering workshops to pecialized services peculiar to the industry, such as those dealing with the measurement, mitation and control of radiation hazards.

Research and Development.—The principal AECL research and development tools re the research reactors already mentioned and described in Statement I. Of these, hree (NRX, NRU and WR-1) are major research reactors and all three have many facilities n their cores for irradiation of materials for extended periods. In addition, the reactors ave horizontal neutron beam holes which allow intense neutron beams to be directed hrough the reactor shielding to experimental rigs. Typical experiments include studies n the physics of fission, neutron capture (n, y) reactions, radiation damage in materials, nd on the atomic structure and lattice dynamics of crystals revealed by the precise loss of nergy of neutrons inelastically scattered. In NRU, one of the beam holes is provided ith a fast-spinning beam chopper to permit time-of-flight studies on neutron interactions ith matter. The reactors also have special separate fuel channels, or loops, for experiments on materials under reactor core radiation and a variety of coolant conditions. The xperiments include fuel and materials studies, coolant system chemistry and heat transfer easurements for power reactor designs. The in-reactor loop system is complemented by number of out-reactor loops in which similar experiments may be conducted in the bsence of a radiation field.

I.—AECL RESEARCH REACTORS

Name, Location and Use	Date of Start-up	Power	Fuel	Moderator	Coolant
Zero Energy Experimental Pile (ZEEP), Chalk River, Ont.—Lattice experiments and investigation of neutron spectra	1945	150 w. max	Various	Heavy water	—
National Research Experimental (NRX), Chalk River, Ont.—Research, engineering tests and isotope production	1947	30,000 to 40,000 kw.	Enriched uranium[1]	Heavy water	Ordinary water
National Research Universal (NRU), Chalk River, Ont.—Research, engineering tests and isotope production	1957	90,000 to 120,000 kw.	Enriched uranium[2]	Heavy water	Heavy water
Pool Test Reactor (PTR), Chalk River, Ont.—Reactivity and absorption measurements	1957	100 w.	Various	Ordinary water	Ordinary water
ZED-2, Chalk River, Ont.—Lattice experiments.	1960	100 w.	Various	Heavy water	—
Whiteshell Reactor No. 1 (WR-1), Pinawa, Man.—Research and engineering tests	1965	40,000 to 60,000 kw.	Enriched uranium	Heavy water	Organic liquid

[1] Conversion from natural uranium to enriched uranium commenced in 1962. [2] Conversion from natur uranium to enriched uranium commenced in 1964.

A further major facility at CRNL is the 10,000,000-volt "MP" Tandem Van de Graa Accelerator, associated with extensive experimental and data analysis systems online t computers. Among its many uses are precise studies of the structure and excited state of heavier atomic nuclei. A beta-ray spectrometer of extremely high resolution is use for various studies of radionuclides, often in association with the accelerator laboratory A 10,000-acre controlled area of undeveloped land surrounding the laboratories at CRN is used for environmental and other studies including radioactive waste management. A similar area exists at Whiteshell Nuclear Research Establishment (WNRE) in Manitob Other important equipment includes a mass separator, mass spectrometers for solids an gases, a scanning electron microscope, high-power electron microscopes, an electron prob micro-analyser, various mechanical test rigs, a radio frequency accelerator laboratory an high-speed computers.

AECL basic research projects include some that have pioneered new technique Thus, the high resolution lithium-drifted germanium gamma-ray detectors pioneered a CRNL in 1963 have been used with the Tandem Accelerator to measure nuclear lifetime by gamma-ray Doppler shift measurements. New types of neutron spectrometers wer designed for studies of the structural dynamics of condensed matter by inelastic neutro scattering techniques. The "channelling" of ions between rows of atoms in crystals i used in several techniques to find the location of foreign or displaced atoms, the lifetime o nuclear fission, radiation damage and annealing behaviour in metals and semi-conductors atomic configurations in surface oxide films and the orientation of crystals.

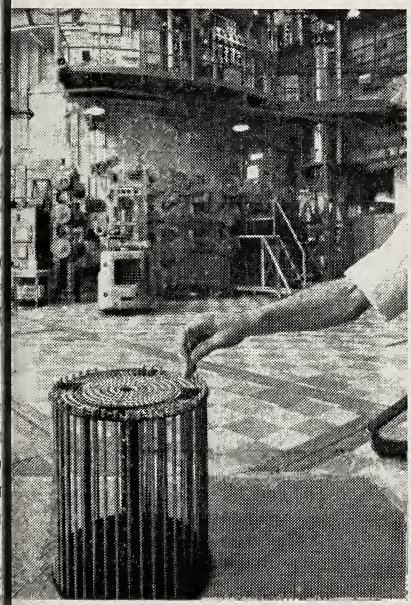
A pioneer study has been made of the uptake of tritiated water and its subsequen fate in the human body. Special lines of research at WNRE include the properties o reconstituted biological membranes. Radiation biology studies at CRNL are especiall concerned with recovery from radiation damage in chromosomes and organisms as well a hereditary effects of mutations.

A network of sensitive monitors for atmospheric neutrons from cosmic-rays and other ɔurces has been established at selected locations across the world. The most sensitive is ɔcated at Deep River near CRNL. These monitors have provided early warning of solar ares useful to the United States interplanetary space program.

In AECL's applied research program, the development of research and power reactors ɔntinues to be of importance. Fuel development takes account not only of the needs of ıe present generation of reactors but also of the advanced systems now being explored. evelopment of other reactor core components continues in parallel. Mechanical develop-ents include fuel-handling systems and research equipment for making measurements in ıe cores of operating reactors, including creep, dimensional and other property changes. ther studies include heat transfer and fluid dynamics, reactor safety studies, and reactor ıstrumentation and control. While applied research and development on fuels and aterials is carried out at both CRNL and WNRE, the behaviour of a selected composite rganic liquid as reactor coolant receives special study at WNRE.

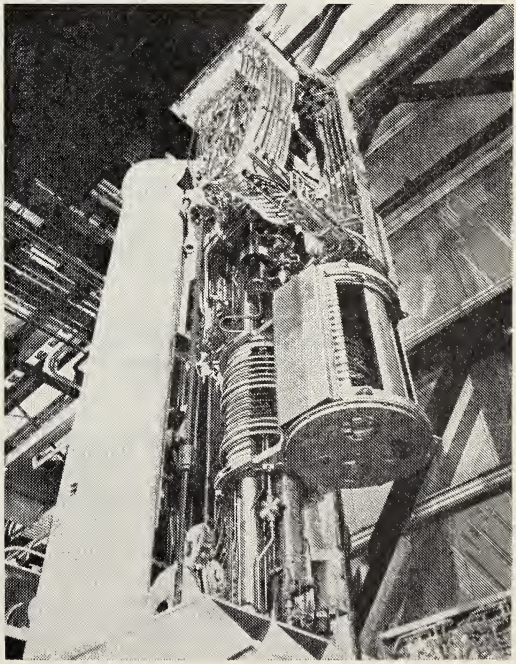
Reactor physics studies make use of the small reactors ZEEP, ZED-2 and PTR at RNL, and extensive use of the computer facilities.

Nuclear Power in Canada.—Electric power generation in Canada is mainly in the ands of large utility commissions and companies. The largest have developed on a base f hydro-electric power. The water resources in Ontario are mostly already harnessed, nd oil and gas come from such distant sources that coal is imported. Since 1952 it has eemed likely that nuclear power could be developed to meet the economic competition.



ıe core of "Slowpoke", the 10-inch-high, mple-to-operate nuclear reactor recently rought into operation by AECL. In the back-round, for comparison, is NRX, one of the vo large research reactors at Chalk River.

The fuelling machine for the Gentilly power station under test at AECL Power Projects, Sheridan Park. The machine will load and unload fuel from the bottom of the vertically oriented reactor, which will be in operation in early 1971.



It has proved necessary to build very large nuclear generating stations to realize thi prospect. The first, located at Pickering on Lake Ontario near Toronto, is scheduled t come into service in 1971-74 and has four 500-megawatt units for a total of 2,000,00 kilowatts. The prospect is now that abundant electric power will be available at a uni cost that lowers as demand increases. A 3,000,000-kilowatt station having four 750 megawatt units is under construction at the Bruce site on Lake Huron. This site, firs known as Douglas Point, was chosen in 1959 for the first "full-scale" nuclear plant propose as two 200-megawatt units. One of these was constructed and came into operation i 1967 but by then was too small to meet the economic competition. The type of nuclea power reactor adopted for all the above stations was evolved by AECL in conjunctio with The Hydro-Electric Power Commission of Ontario and the Canadian General Electri Company. A small demonstration prototype power reactor (NPD) of 25 megawatt electrical rating has operated satisfactorily since 1962 at Rolphton, not far from CRN on the Ottawa River. The type is characterized as heavy water cooled and moderate fuelled in pressure tubes by short bundles of fuel rods of natural uranium dioxide. Th pressure tubes and fuel cladding are of a zirconium alloy. Other zirconium alloys greater strength and for longer life are being developed by AECL and industry. Th pressure tube type of heavy-water-moderated reactor has been given the name CANDU.

Heavy water under pressure (PHW) as a coolant has been valuable in leading to a economical reactor design, but it is expensive and its toxicity and high pressure caus difficulty in maintaining leakage-free systems. Other coolants are therefore under stud for CANDU reactors, in particular the organic coolant used in the WR-1 reactor (Stat ment I) and boiling ordinary or light water (BLW), selected for the 250-megawatt prot type at Gentilly, Que. (Statement II). That table also notes that the NPD reactor wa converted successfully in 1968 to operate with the heavy-water-coolant boiling. Th mode of operation promises a means of raising the efficiency of future large heavy-wate cooled reactors. The best promise, however, of higher efficiency is offered by the organ coolant because of its higher operating temperature; higher efficiency lowers the fuelli cost and the capital cost per kilowatt and also reduces the waste heat.

II.—CANADIAN NUCLEAR POWER REACTORS

NOTE.—All reactors listed operate with natural uranium fuel and heavy water moderator.

Utility	Type[1]	Power MWe Net	Name or Location	Nuclear Design Engineers[1]	Date o First Power
Ontario Hydro	BHW[2]	22	NPD Rolphton	AECL and CGE	1962
Ontario Hydro	PHW	208	Douglas Point	AECL	1967
Karachi Electric Supply Corp., W. Pakistan	PHW	125	KANUPP	CGE	1970
DAE India	PHW	203	RAPP I	AECL and DAE	1970
Ontario Hydro	PHW	508	Pickering I	AECL	1971
Hydro-Quebec	BLW	250	Gentilly	AECL	1971
Ontario Hydro	PHW	508	Pickering II	AECL	1971
Ontario Hydro	PHW	508	Pickering III	AECL	1972
DAE India	PHW	203	RAPP II	AECL and DAE	1973
Ontario Hydro	PHW	508	Pickering IV	AECL	1973
Ontario Hydro	PHW	750	Bruce I	AECL	1975
Ontario Hydro	PHW	750	Bruce II	AECL	1976
Ontario Hydro	PHW	750	Bruce III	AECL	1977
Ontario Hydro	PHW	750	Bruce IV	AECL	1978

[1] Explanation of abbreviations:—

CGE=Canadian General Electric Company Limited
DAE=Department of Atomic Energy, India
NPD=Nuclear Power Demonstration
RAPP=Rajasthan Atomic Power Project
KANUPP=Karachi Nuclear Power Project
PHW=Pressurized Heavy Water coolant
BHW=Boiling Heavy Water coolant
BLW=Boiling Light Water coolant

[2] Converted from PHW to BHW operation in 1968.

AECL Power Projects is responsible for the engineering of nuclear power generating systems and the management of complete projects; it acts in the role of nuclear consulting engineer for utilities. It undertakes the detailed design and late-stage development of power reactors, including control systems and fuel-handling mechanisms. In addition to its design offices, Power Projects also has extensive development and testing laboratories at the Sheridan Park Research Community near Toronto.

The Bruce Nuclear Generating Station will be associated with an AECL-owned, 800-ton-a-year heavy water production plant. This, in conjunction with a matching capacity independently owned and being built in two plants in Nova Scotia, is expected to meet the demand from reactors for use in Canada.

Commercial Products.—The group that now forms AECL Commercial Products has had quite a long history of development. For example, in 1951 they produced a unit, incorporating Cobalt-60 made in the NRX reactor, which was used at London, Ont., to treat the first patient to receive Cobalt-60 beam therapy. Since that time, some 700 cancer therapy units, designed and manufactured by Commercial Products, have been installed in 51 different countries. As designer and manufacturer of irradiation equipment, Commercial Products has now supplied 200 irradiators, other than cancer therapy units, to 33 countries. These irradiators range from small units to large installations. Important milestones were passed with the design and building of the world's first commercial food irradiator and the first two sterilization plants for medical products in North America.

There are now 38 isotope products produced in the NRX and NRU reactors at CRNL and processed by Commercial Products. As a result, Commercial Products is today one of the world's major suppliers of processed isotopes, a success greatly assisted by the research and development effort expended in devising new products and applications. This effort covers the fields of gamma-irradiation, medical applications, food irradiation, isotope process development, nuclear instrumentation, neutron applications, isotope power sources and radiation chemistry. Examples of the applied research and development work include the irradiation of potatoes to inhibit sprouting, the development of an aerial survey technique for use in uranium and thorium prospecting, and the use of radioactive tracers in an investigation of wood chip movements in the large digesters used in the pulp and paper industry.

In mid-1970, AECL Commercial Products set up the first Canadian neutron activation analysis service, using the antimony-beryllium neutron source in Ottawa and nuclear reactors at Chalk River. Activation analysis is used to detect mercury and other elements in foodstuffs and in a wide range of other materials by the technique of irradiating the substance with neutrons and then analysing the resulting radioactive isotopes produced. Some 60 elements—of the 90 in the periodic table—can be detected in quantities as minute as one part per million. The service was established to meet the growing demand for such data from scientists in government and industry.

Commercial Products maintains a consulting service equipped with a mobile radioisotope laboratory, which can be used for on-location tracer studies and other consulting work. It also maintains a network of representatives in major countries.

Relations with Other Organizations.—A strong feature of the Canadian organization for atomic energy is that the regulatory body—the Atomic Energy Control Board—(AECB) is separate from the chief executive agency (AECL). However, close working relations are maintained. The President of AECL is, ex officio, a member of the Control Board and AECL staff are members of certain AECB advisory committees, especially those concerned with safety.

AECL shares with the Department of Industry, Trade and Commerce a desire to increase the participation of Canadian industry in the developing nuclear market and AECL's many overseas interests involve relationships with the Department of External Affairs and the Export Development Corporation.

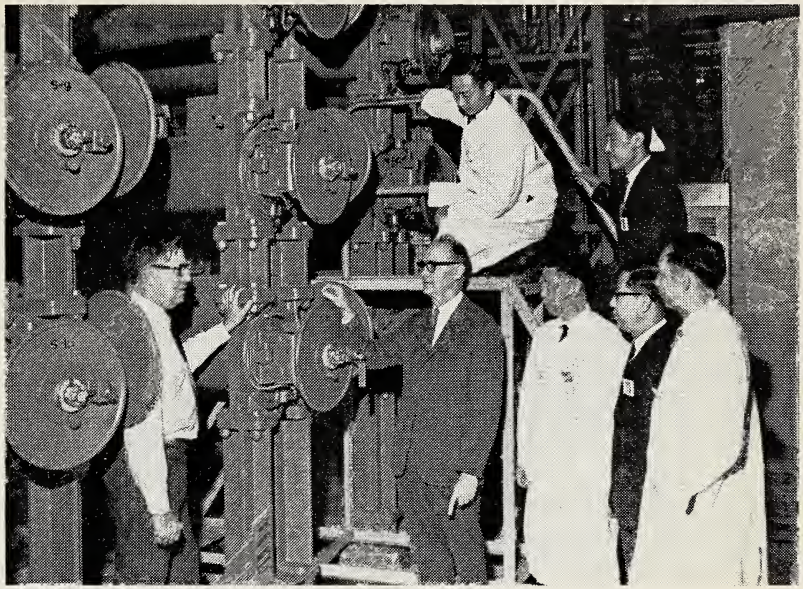
While AECL does not make grants to universities, research contracts are negotiated in many cases in which the university has the necessary facilities and expertise. Some 20 Canadian universities undertake work for AECL and the value of these contracts in any one year is about $750,000. However, the close relations that have been built up with universities are mainly the result of personal contacts. During the summer, more than 100 graduates and undergraduates of Canadian universities work at AECL establishments. A number of professors also use AECL facilities for research projects, a service which, due to the demand, is now available throughout the year under the aegis (at CRNL) of the Experiments Advisory Committee, a joint universities and CRNL committee. It is also noteworthy and relevant that some 60 former AECL staff now hold staff positions at Canadian universities, many of them as department heads.

AECL has encouraged and fostered Canadian industrial participation in many aspects of its program. One means is by the award of research and development contracts, on which some $7,000,000 is spent annually. Amounts of the same order are also spent on professional and consulting services. Development contracts have contributed materially in qualifying Canadian companies to supply services, materials and equipment to the exacting standards required in the nuclear industry. As a result, two Canadian companies are now established as qualified and competitive suppliers of nuclear fuels. In other cases qualification results from trial orders, supported by the provision of a prototype or samples, specifications and assistance from the laboratories and technical staff.

In building nuclear power stations, since the utilities handle much of their own business, there has been only limited scope for private industry in Canada. The Canadian General Electric Company, which engineered NPD and engineered and supplied WR-1, also is responsible for the KANUPP nuclear power reactor for Pakistan. Owing to gaps in their program, a merger of the CGE design group and AECL Power Projects was entered into for a five-year period from July 1968.

International relations have been and continue to be important throughout the whole program. Many irradiations in the NRX, NRU and WR-1 reactors have been made for several countries at their expense or on a shared-cost basis and especially for the United States, the United Kingdom and Euratom. In exchange for information on the CANDU reactor program, the United States has for many years carried out an agreed research program at an expenditure of between $500,000 and $1,000,000 a year in support of the AECL program. Frequent technical meetings have maintained contact between the U.K. steam generating heavy water power reactor program and the CANDU program. Informal exchanges of visits and information with France have taken place for many years. These contacts have been strengthened and put on a more formal basis recently in view of a renewed interest in France in heavy water power reactors. Both the USAEC and the U.K. Atomic Energy Authority have continuously maintained liaison offices at CRNL. From time to time AECL has had a liaison office with the UKAEA and is establishing an office in Paris. Close relationships also exist between AECL and the Department of Atomic Energy (DAE) in India. The first Canadian-designed research reactor to be built outside Canada was built in a co-operative program, partly supported by the Colombo Plan, near Bombay. AECL also designed India's first heavy water nuclear power station, the Rajasthan Atomic Power Project (RAPP) now under construction in a co-operative program. There will be two reactors of 200-megawatt rating very similar to the Douglas Point CANDU in the RAPP station. Formal collaboration has been established also with Australia, West Germany, Italy, Japan, Pakistan, Spain, Sweden, Switzerland and the Soviet Union.

AECL is represented on a number of important international organizations and committees. Its Senior Vice-President, Science, represents Canada on the United Nations Scientific Advisory Committee to the Secretary General, and is also a member of the International Atomic Energy Agency (IAEA) Scientific Advisory Committee. Canada is a member of the board of governors of the IAEA and has participated in many advisory



Research Reactor
l being introduced
at Chalk River. A
zed version of that
reactor is being
by Atomic Energy
da Limited to the
Atomic Energy
for delivery by
tember 1973.

panels, conferences and symposia organized by the IAEA and has acted as host to meetings in Canada. AECL has seconded staff to positions at the Director level in the IAEA as well as to other positions. AECL organized Canada's participation in the three United Nations Conferences on the Peaceful Uses of Atomic Energy in 1955, 1958 and 1964. AECL has participated strongly in the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) as well as other *ad hoc* United Nations Committees. AECL has also contributed to the committees of the International Commission for Radiological Protection. AECL participates in the International Nuclear Data Committee (of the IAEA), European-American Nuclear Data Committee and the European American Committee on Reactor Physics, both of the European Nuclear Energy Agency. AECL also collaborates with the unions of the International Council of Scientific Unions in sponsoring and participating in International Conferences and working parties.

Employment and Financial Statistics.—Personnel, income and operating expenses of AECL for the year ended Mar. 31, 1969 were as follows:—

III.—AECL MANPOWER AS AT MAR. 31, 1969

Establishment	Professional[1]	Technical	Administrative	Total
CRNL	467	534	430	2,475[2]
WNRE	145	204	175	754[2]
Power Projects	252	438	185	875
Commercial Products	129	108	153	588[2]
Head Office	21	—	62	83
Totals	**1,014**	**1,284**	**1,005**	**4,775[2]**

[1] Of the professional staff, 356 had a Master's degree or higher.

[2] Includes hourly paid personnel.

IV.—INCOME AND EXPENSES, YEAR ENDED MAR. 31, 1969

Item	Amount
RESEARCH PROGRAM	$
Operating Expenses—	
CRNL	38,813,122
WNRE	11,711,618
Power projects design and development	19,690,024
Radiation chemistry and isotope research	2,099,393
Head Office administration	1,423,686
	73,737,843
Income—	
Gross income from engineering services, housing accommodation, hospitals, sales of steam, etc.	14,818,843
Excess of expenses over income, provided for by parliamentary appropriation	58,919,000
Capital Expenditures Provided for by—	
Parliamentary appropriation	9,681,000
Retained earnings	1,028,655
	10,709,655
COMMERCIAL OPERATIONS	
Income—	
Sales, rentals and miscellaneous	10,337,048
Expenses—	
Cost of sales, research and development, selling, administration, etc.	10,229,800
Excess of income over expenses credited to retained earnings	107,248

Subsection 4.—Scientific Activities of the Department of Energy, Mines and Resources*

The Department of Energy, Mines and Resources is the earth sciences agency of the Federal Government, responsible for the discovery, investigation, development and conservation of the nation's mineral, water and energy resources. Its programs cover a broad spectrum, ranging through fundamental investigations of Canada's natural resources and their environments, applied research on methods of finding and extracting resources, economic research on markets and potential demands, and inter-disciplinary studies leading to the development of policies and plans for resource management. Of a total staff of about 5,200, about 3,000 are scientific and technical personnel. Expenditures on scientific research, other than in the social sciences, for the years ended Mar. 31, 1967 and 1970 were

	1966-67	*1969-70*
	$'000	$'000
Engineering and technology	7,204	15,000
Natural Sciences—		
Agricultural sciences	—	50
Astronomy	2,689	3,100
Atmospheric sciences	549	75
Biological sciences	214	400
Chemistry	1,404	3,800
Mathematics	—	50
Oceanography	17,624	30,000
Physics	1,126	1,500
Solid earth sciences	25,757	40,000
TOTALS	56,567	93,975

The research activities of the Mines Branch are described in a special article entitled "Federal Research Advances Canadian Mineral Development", appearing in Chapter XIV on Mines and Minerals. The salient features of other research groups of the Department and their accomplishments are outlined in the following paragraphs.

* Extracted from material prepared by Mrs. M. J. Giroux, Public Relations and Information Services, Department of Energy, Mines and Resources, Ottawa.

The *Geological Survey of Canada* has the function of providing a systematic knowledge f the geological history of the country and of collecting, analysing and interpreting data o assist industries and government agencies concerned with Canada's renewable and on-renewable resources, with land use, or with engineering projects where ground tability is a concern. Continuing research projects, especially those involving a ajor component of laboratory work, have given rise to the establishment of teams ith unique capabilities in such areas as mass-spectroscopy and isotope dating, includ- g the development of instrumentation and continuing refinement of techniques in pport of field research; biogeochemistry, involving geology, geochemistry and botany; ay mineralogy; and various geophysical projects, especially those involved in the develop- ent of remote sensing devices. Research tools and systems that have been developed clude: high resolution aeromagnetic survey systems; ground gamma-ray spectrometry; evelopment of airborne gamma-ray spectrometry for the search for radioactive minerals; ractical methods of field geochemistry for prospecting; field methods for detection of adon-222 in streams and sediments to outline uranium-bearing areas; and 'glaciofocus', a ethod of tracing mineral trains in glacial desposits back to source as an aid to prospecting. n addition, the Geological Survey has led the world in rapid reconnaissance geological apping using helicopters and other aircraft, especially in the field techniques developed nd applied to the mapping of the arctic regions.

The services of the *Surveys and Mapping Branch* are described at pp. 23-25. Two esearch teams were developed during the 1960s, one to improve the efficiency of topographic apping and photogrammetry and the other for research in geodesy and to improve the fficiency of methods used to conduct and analyse geodetic surveys. Both teams are unique n that they work in close collaboration with groups actively engaged in mapping opera- ions, as distinct from other researchers who are concerned with particular aspects or basic roblems in these fields.

The function of the *Earth Physics Branch* is to investigate the magnetic, gravity and eismic characteristics of the earth as a whole and of the Canadian land mass in particular. he Branch utilizes the results of its research and of the research done elsewhere to obtain ew and more detailed knowledge of the Canadian land mass, leading to improved magnetic nd gravity charts, improved knowledge of earthquake hazards and improved detection of nderground nuclear explosions. Some major programs are: studies on the properties and haracteristics of the earth's crust and deep interior; study of the magnetic field in Canada nd its variations, both to aid navigation and to investigate the ancient history of the earth; tudy of variations in the gravitational field in Canada, relating this to the shape of the arth, and to problems in accurate surveying. The Branch is concerned with the recovery f meteorites and investigation of meteorite craters. Branch scientists conducted the orld's first systematic search for ancient meteorite craters using air photographs, maps and ther information. Sixteen impact sites have been identified in Canada and a greater umber of possible sites are under investigation. These investigations have been distin- uished by the broad approach taken to the problems of crater identification and analysis; ravity, magnetic, seismic, resistivity, structural, topographic and petrographic methods ave all been employed; even more important has been the pioneering use of continuous iamond drilling to investigate the deep zones of a number of craters.

The knowledge so gained has application to the nature, origin and abundance of mete- rites and to the history of the more stable parts of the earth's crust. The analysis of field nd laboratory observations, coupled with pertinent experiments, has led to a better under- tanding of the dynamic properties of the earth's crust and the nature of its response to igh-energy shock pulses. These results have application to the field of rock mechanics nd to the contemplated use of nuclear explosions for large excavations and are of signifi- ance to the mining and oil and gas industries because large impact structures have some- imes formed or controlled the distribution of deposits of economic importance.

The *Polar Continental Shelf Project* has been undertaken to increase the scientific and echnical knowledge about the arctic regions of Canada. It provides the means for inte-

grating or co-ordinating arctic investigations and, by developing specialized knowledge and experience in technology, logistics, communication and human problems and making such facilities and knowledge available to responsible organizations, it promotes effective scientific and technical work in the arctic regions. The project works directly with other Branches of the Department in planning and carrying out an integrated program of arctic research and survey; it conducts independent investigations to obtain information of basic importance about arctic phenomena, resources or conditions; and it co-operates with other government departments and agencies and with universities to provide expertise and facilities for arctic studies. Major programs, most of which are undertaken in co-operation with other departmental branches or agencies, include: aeromagnetic surveys of arctic regions and preparation of aeromagnetic maps; geodetic and topographic surveys of arctic regions to improve surveying techniques and knowledge of glaciology; investigation of marine geology of the arctic continental shelf and continental slope; investigation of terrestrial geology of arctic regions; hydrographic survey of the arctic continental shelf and slope; and oceanographic survey of arctic waters near the continent.

The *Marine Sciences Branch* carries out hydrographic and oceanographic surveys and studies to meet the national requirements for nautical charts; surveys of marine resources on the continental shelf and in adjacent oceans; oceanographic studies of water properties, marine pollution, currents, waves and related phenomena in the interest of fisheries, transportation, coastal engineering and defence; and research in wave theory, diffusion, large-scale circulation patterns, time and space variability, and related marine phenomena, the understanding of which is essential for effective use of the oceanic resources and the marine environment.

The Branch operates the Atlantic Oceanographic Laboratory, part of the Bedford Institute. This Institute, which it shares with the Fisheries Research Board, is recognized as one of the finest oceanographic facilities in existence anywhere. It has an excellent location on Bedford Basin at the inner end of Halifax Harbour, outstanding waterfront and wharves, a first-class fleet of six major vessels and a larger number of minor craft and launches, excellent equipment and a competent staff. CSS *Hudson*, commissioned in 1963, is one of the largest and best-equipped research ships in the western world. It has ice-breaker configuration, a cruising range of 15,000 miles and the capability to work on any ocean of the world; in 1970 it circumnavigated the Americas. The staff of the Institute has developed special expertise in a number of fields. The work of the Marine Geophysics team, which includes seaborne gravimetry and continuous automatic data processing, is outstanding; a second team has developed competence in the art of measuring currents by moored current meters; a third team has developed a unique system for measuring some of the exchanges between the ocean and atmosphere, which are basic in the processes of weather formation and the development of waves and ocean circulation; and a fourth team has made important advances in describing and explaining the circulation of water in the northwestern Atlantic Ocean and the exchanges of water between the Atlantic and Arctic basins.

The *Inland Waters Branch* investigates and describes the inland water resources of Canada and determines, from the viewpoint of science and engineering, how these resources may best be utilized for the benefit of the people and the industries of the country. Team effort in the Branch takes many forms. For example, the Water Survey of Canada depends on a team of hydrometric experts to deal with streamflow measurements at 2,000 gauging stations throughout Canada. Technical and engineering support staffs deal with special investigations on river-sediment transport and discharge measurements under ice. In the field of water pollution, scientists and engineers of the Water Quality Division, the Hydrologic Sciences Division and the Great Lakes Division apply many skills and disciplines to deal with major problems. The Canada Centre for Inland Waters, located at Burlington, Ont., has an inter-disciplinary program of scientific research and data collection on the Great Lakes. This centre is rapidly becoming one of the major scientific centres for limnological research in North America.

ubsection 5.—Scientific Activities of the Department of Indian Affairs and Northern Development*

The Department of Indian Affairs and Northern Development has statutory respon-ibility for fostering, through scientific investigation and technology, knowledge of the anadian North and of the means of dealing with conditions related to its further develop-ient. The Department has several methods of carrying out this responsibility. Financial ipport, through grants, is given to university groups, expeditions and northern institutes) enable them to send research workers into the northern areas of Canada. The main bject of this program is to increase the supply of research scientists with northern experience nd interests. Grants are also given to agencies to allow them to work on specific problems f northern significance.

The Department has facilities for research in the North. It operates a permanent esearch laboratory at Inuvik, N.W.T., which has year-round facilities accommodating ientists from government, industry and universities and are specially designed for arctic esearch. The laboratory serves as a base for extensive field studies conducted in a number f small field stations in the Western Arctic. In addition, a small research laboratory is eing established at Igloolik in the Eastern Arctic. Initially it will be used by scientists nvolved in the human adaptability studies in connection with the International Biological rogram but later will become available for other scientific work.

The Department provides advice and information to scientists on work that has been r is being carried out in Northern Canada in their own and in related fields, on transporta-on and working conditions in the North and on associated matters. It supports the *Arctic ibliography* produced by the Arctic Institute of North America, which provides a means f information retrieval on northern scientific matters, and encourages scientific conferences n specialized aspects of northern research.

The Department also carries out research related to its own operational responsibilities, ncluding the Canadian Wildlife Service (p. 55), Eskimo and Indian affairs, development f northern resources, and the National and Historic Parks. Much of this research lies in he field of social anthropology and is directed to the effects of rapid change on the native eoples of Canada and the resulting implications for education, welfare and other services. otable in this context is the Mackenzie Delta Research Project, a multi-disciplinary study n depth of a comparatively restricted area.

Subsection 6.—Scientific Activities of the Canadian Meteorological Service†

Meteorology, the science of the atmosphere, affects all parts of the economy and all reas of the country. It is basic to resource management in primary endeavours such as griculture, forestry, mining, fishing, water and air (pollution), as well as to manufacturing, onstruction, transportation, power, etc., and the advancement of knowledge in this iscipline, which ranges from the development of new techniques to improve routine eather forecasts to research of the upper atmosphere, is therefore of great value in almost very area of human activity. One of the characteristics of meteorological research is that he information and understanding obtained is seldom very far removed from having conomic significance, often of great importance. Almost all research can be readily elated to anticipated practical benefits.

Capital, operating and maintenance funds for research and development allotted to he Meteorological Service for the year ended Mar. 31, 1969, amounted to $2,800,000. In ddition, assistance in the form of grants and contracts in the field of meteorology carried ut by Canadian universities amounted to about $300,000.

* Prepared by G. W. Rowley, Scientific Adviser, Department of Indian Affairs and Northern Development, ttawa.

† The organization and functions of the Canadian Meteorological Service are described at pp. 30-34.

Climatology Activities.—The Meteorological Service conducts research on the applications of meteorology and climatology to water resources, agriculture, forestry, transportation, communications, industry, construction, air pollution control and aviation. In the field of *hydrometeorology*, which involves that portion of the hydrologic cycle which is affected by or which affects the atmosphere, the main processes of interest are precipitation, energy exchange and evaporation. Specialized studies are carried out on storms, the meteorology of lakes and rivers, and the energy balance and water balance of the natural environment. Many of these are of a co-operative, inter-disciplinary and inter-agency nature, some in connection with international research programs and others in relation to flood and water supply forecasting.

Climatic research in support of natural resources, Arctic exploration and development, industry and commerce is conducted within the Service itself, by the assignment of personnel to other agencies, through co-operative research, or through research contracts; bioclimatological research relating to productivity of forests is carried out co-operatively and in this field a newly designed lysimeter is under construction to be used in studies of evapotranspiration from crops, the air-earth crop water balance and the evaluation of evaporation instruments; arctic studies are made in support of oil and mineral exploration, the selection of airport, town and mining sites, the design and operation of communication systems, transportation and operations in severe cold weather; topoclimatological research, using mobile and stationary sensors, is a basis for optimum land use in fruit production and town planning; engineering studies are undertaken in support of the construction industry and analyses are used in the national building code; and an ice accretion climatology is being developed to aid in the design of support towers.

Atmospheric Research.—Great progress has been made in theoretical meteorology using the basic dynamic and thermo-dynamic equations in conjunction with very large computers. Topics studied include: energetics of atmospheric circulations; modes of development in extra-tropical cyclones; influence of moisture exchanges on the synoptic circulation; and new physical and mathematical models for studying and forecasting circulation patterns.

Studies of atmospheric processes on a scale from a few inches to about a mile (micrometeorology) are of importance in a number of fields including air pollution, agriculture, forestry, urban planning, etc. Study topics include: wind and turbulence in the surface boundary layer; turbulent flux of heat, momentum and particulate matter; variability of momentum flux in the earth's boundary layer; effects of turbulence on coherent and incoherent light propagation in the atmosphere; and temperature and humidity microstructure at a land-lake interface.

Studies of atmospheric motions ranging from about one mile horizontally up to about 100 miles (mesometeorology) are of great importance in local weather variability and are of basic importance for aviation terminal forecasting, air pollution control, etc. Studies include: mesonetworks for aviation terminal forecasting; meso-scale circulations as related to local terrain including lake breezes, valley winds, gravity waves, etc.; and energy and momentum exchanges between meso-scale and large-scale circulations.

Studies on cloud and precipitation processes in the atmosphere may have very great economic consequences, partly because it may be feasible to modify and to a certain extent control these processes. Problems being investigated include: mechanisms of rain, cloud and hail formation and methods to modify these mechanisms; cloud-seeding trials and their evaluations; dispersal of fog at airports; condensation nuclei and ice-crystal formation; use of radar to study and measure cloud and rain; detection and tracking of lightning and lightning storms for forest-fire control; and measurement of electrical fields including conductivity and ion current density and their relationship with other meteorological parameters.

The study of radiation, both solar and terrestrial, is of fundamental importance in respect to atmospheric energetics and information on radiation is of immense value in many

man activities. Research programs include: basic properties of radiation instrumenta-
n, their design and standardization by international intercomparisons; development and
e of radiometersondes for measuring radiational variations with height; use of radiation
ta for a number of applications including atmospheric dynamics, agriculture, construction,
.

The atmosphere above 30 km. contains only about 1 p.c. of the earth's atmosphere but
e nature and extent of the interaction, both physical and dynamical, between this region
d the underlying atmosphere requires examination. The coupling mechanisms, through
culation and radiative processes, require study both from the viewpoint of downward
ergy propagation and climatic modification, and upward in relation to radio communica-
ns and flight through these regions. Studies include: the measurement of ozone in the
nosphere both from ground-base systems and by use of ozonesondes; analysis of ozone
ta and radio-active tracers to establish circulation patterns; development and operation
a noctilucent cloud observational network; development and operation of air-glow
tions; and development of meteor-trail Doppler radar techniques for use in measuring
nds in the 80-110-km. range.

Instrument Research.—The Meteorological Service uses a large number of instru-
nts in its operational surface and upper-level observing networks, including those that
e purchased or developed for specific research programs. Of particular note are the
tomatic weather observing stations that measure a variety of standard or special weather
rameters, encode the measurements and transmit them in digital form by teletype or
dio telemetry circuits, which have been developed primarily to obtain real-time data
m locations at which it would not be possible or economical to establish manned observa-
ries; these stations also provide highly objective, error-free measurements.

Climatological data recorders have been developed to extend the network of stations
at delineate in detail the most important climatic parameters—temperature, precipita-
n, wind humidity and evaporation; there is an increasing need for long-duration recorders,
ted to the Canadian climate, to extend this network into remote northern areas.

Always highly respondent to the aviation needs for meteorological data, the Service
s developed and improved instruments for measuring temperature, humidity, wind,
sibility, cloud height, and altimeter setting at major airports. Efforts are directed toward
e development of instruments that make more accurate and more representative measure-
nts, and also toward the effective distribution and display of these data to aircraft
erators and controllers.

The extensive measurement and data-recording requirements of Service research
ograms in mesometeorology and micrometeorology and in hydrometeorology and bio-
matology have required the development of various sensor, data-processing and data-
cording systems. Among these are a lower-troposphere microsonde for measuring the fine
ucture of temperature and humidity in the lower 2,000 feet of the atmosphere, and a
lti-element forest bioclimatology station.

The Service has greatly extended the range, force and accuracy of its measurement of
nds in the upper atmosphere to 100,000 feet above the surface, primarily by the procure-
nt and installation of a new generation of radiosonde ground equipment. This expanded
pability has been enhanced by the development of minor improvements in tracking and
cording equipment, operating techniques and computing methods. Development is also
der way of equipment for use in conjunction with meteorological rocket firings which will
compatible with the standard radiotheodolite and meteorological data-recording system
present in use.

Various studies are carried out to improve procedures and methodology in a number of
eteorological Branch activities, including studies to optimize data archiving, computer
, meteorological communications, weather dissemination, etc.

Section 3.—Scientific Research Supported by Provincial Governments

Subsection 1.—Provincial Organizations

Six of Canada's provincial governments (Nova Scotia, New Brunswick, Quebec Manitoba, Saskatchewan and Alberta) have established research councils or foundations and two others (Ontario and British Columbia) have assisted financially in the setting up of such organizations. Most provincial governments have university laboratories to consult particularly about local industrial and agricultural problems, and many individual departments have facilities for research in their particular fields of endeavour or assist research through the provision of financial aid to students working in those and other scientific fields. Agriculture is particularly well covered because of its importance as an export industry but the provinces are also intensely interested in their other natural resources. Their efforts in the fields of agriculture, forestry, mining and fisheries are outlined in the Chapters dealing with those subjects (see Index).

Nova Scotia Research Foundation.—This body was created by the Government of Nova Scotia in 1946 to provide industry and government with scientific and technical assistance in finding new and better ways to utilize the resources of the forest, the sea, the farm, the mine and the process industries. To this end, it seeks to correlate and further scientific and technical work on local problems and available resources. A new $1,500,000 laboratory building, financed by an Atlantic Development Board grant and occupying a commanding 10-acre site in Dartmouth, was completed in 1969. The present staff of 76 includes 51 scientists and technicians. It is governed by a board made up of scientists and industrialists.

The Technical Services Division provides technical information on materials, equipment and processes and gives industrial engineering assistance to manufacturing industries. The various sections include technical information, industrial engineering, new product development, an information centre and an extensive aerial photo-library. The Operational Research Division provides a service for industry and government. Utilizing the mathematical techniques of systems analysis, the Division undertakes projects in the area of optimal resource allocation, production scheduling and distribution. The Chemistry Division carries out water, mineral and foliar analysis as well as pilot plant studies on chemical processes. One of its main tasks is to develop new commercial processes and products which utilize the existing minerals and other natural resources of the province. The Engineering Physics Division makes available developments in applied physics to Nova Scotia industry. Emphasis is at present placed on research and development in electronic and mechanical engineering and in non-destructive testing. The Geophysics Division carries out gravity, seismic, magnetic, well-logging and electromagnetic surveys for industry and for government, and also sponsors a program of research on the surficial geology of Nova Scotia. The Applied Biology Division has been carrying out field and laboratory studies on the ecology, distribution, growth, harvesting techniques, conservation and cultivation of commercial algae in the Atlantic area. The Library is well stocked with scientific and technical information to aid the Research Foundation staff, industry and government.

A *Research Foundation Bulletin,* issued occasionally, keeps industry advised of Foundation activities and of important discoveries in science and technology. The *Research Record* gives a descriptive account of past research projects.

New Brunswick Research and Productivity Council.—This Council, with financial support from the New Brunswick Government and in specific areas from federal sources, provides an international management consulting service to governments, banking institutions and private industry and undertakes consultation and contract work on a repayment basis from industry. It has 65,000 sq. feet of laboratory space and employs a staff of more than 50 persons. The Council specializes in management consulting, engineering

nd technical information services, conducts training courses in management techniques nd carries on applied research in the fields of mechanical and control engineering, food echnology, microbiology and mineral technology. Policies are established by 13 Council nembers representative of provincial industry, labour, government and education, with he help of specialist advisory committees. The Executive Director has supervision over nd direction of the work of the staff and has charge of all matters relating to the admini- tration of the affairs of the Council. The Chairman of the Council reports annually to he Premier of the province.

Quebec Industrial Research Institute.—The Quebec Industrial Research Institute vas set up under the terms of an Act of the National Assembly (SQ 1969, c. 62), given Royal Assent on Dec. 12, 1969. The Institute is made up of 15 members named by the provincial government after consultation with representatives of major scientific and industrial organiza- ions. Its functions include research in applied science carried out either in its own labora- ories or in those of other research organizations, development of product processes and apparatus of an industrial or scientific nature, and collection and dissemination of tech- nological and industrial information. The Institute is an independent organization financed by provincial grants amounting to $4,000,000 annually for the five years 1970-74. Its laboratories are to be located within the science complex being constructed at Ste. Foy, a suburb of Quebec City, where eventually all Quebec government research laboratories will be grouped. This complex will also house the pilot plant for mineral research which will contain sampling and treatment facilities and in which, in addition to carrying out assay services, research will be conducted into the most efficient methods of recording and treating ores. The Institute is currently located at 710 Youville Square, Quebec City, with the offices of the Minister of Industry and Commerce, through whom it reports to the National Assembly.

Ontario Research Foundation.—The Ontario Research Foundation, established n 1928, is an independent corporation. It derives its powers from a special Act of the Ontario Legislature and is responsible to a Board of Governors consisting of leading mem- bers of the industrial, commercial and scientific communities who are appointed by the Lieutenant-Governor in Council. The organization was financed initially by an endowment und, provided by industrial and commercial corporations through the Canadian Manu- acturers' Association, and an equal block grant from the provincial government. Most of ts current income is derived from contract research undertaken mainly for industry. In ecent years the Ontario Government has provided a direct annual grant to ORF, the amount of which is directly proportional to ORF's income from industry.

The Foundation is concerned primarily with the development of Canadian industry hrough the application of science and technology. Also, through the various departments of the Ontario Government, it undertakes work relative to the natural resources of the province. Foundation activities are not restricted to the province; work is undertaken for ny organization in Canada on the same basis.

The Foundation contributes to the industrial economy and to the general welfare by: 1) undertaking industrial research and development for companies as requested; (2) undertaking research and development for governmental agencies as requested, particularly vith respect to natural resources and to defence; (3) providing and maintaining an effective nd efficient applied research and development facility for the use of industry and govern- nent agencies, using funds provided by the Ontario Government to support the back-up esearch necessary for this purpose; and (4) bringing to the attention of industry and govern- nental agencies research opportunities that promise economic or social benefits.

Situated in the Sheridan Park Research Community, 17 miles west of Toronto, and erving as the nucleus of that scientific centre, ORF provides the most modern facilities nd equipment for scientific and technological investigations. Its staff of approximately 50 scientists, engineers, technicians, and service personnel has diversified academic

training and industrial experience and is so organized that these specialized talents can be applied to individual research and development projects. In effect, the staff of ORF constitutes a reservoir of scientific and technical abilities from which industrial or governmental sponsors can draw at will.

Since its establishment, ORF has provided numerous companies—from the very small to the very large—with research and development services. These have ranged from short-term investigations and feasibility studies, through product and process development, to long-range fundamental scientific investigations. All research and development projects are conducted on a confidential basis—this includes all business, technical or proprietary information revealed to ORF by clients or prospective clients. Patents resulting from research and development studies are assigned to the client.

Manitoba Research Council.—The Manitoba Research Council consists of seven members representing natural-resource-based industry, manufacturing, the University of Manitoba and labour. Its work is financed by provincial government appropriations, although fees and service charges may be levied for its services. The objectives of the Council are to promote or carry on, or cause to be promoted or carried on, research and scientific inquiries respecting agriculture, other natural resources, industry or other segments of the economy of the province and to help secure for Manitoba the benefits of research and scientific inquiries carried on elsewhere. The preponderance of small industrial establishments in Manitoba and their need for assistance in developing a more scientifically based production capability to improve their competitive position in domestic and world markets was the major reason for the establishment of the Council. At present it maintains an office in the Provincial Government Administration Building (Norquay Building) in Winnipeg.

Saskatchewan Research Council.—This Council was set up in 1947 under an Act of the Government of Saskatchewan. The Council carries out research in the physical sciences with the aim of improving the provincial economy. It is therefore particularly concerned with the commercial exploitation of provincial resources and the scientific aspects of business. At first the Council had no scientific personnel and laboratory facilities of its own. Its research program was carried on at the University of Saskatchewan and was promoted by means of grants to members of the staff and scholarships to graduate students. The 1947 Act was amended in 1954 to empower the Council to acquire property, employ staff and conduct its own financial affairs. Laboratory buildings were erected on the university campus in 1957 and were extended in 1963. In the present program of research the emphasis is on water and mineral resources, fields of agriculture not covered by other organizations, and technical assistance to industry. A large part of the program is carried out by the permanent staff, numbering about 60, but some of the Council's research is still promoted by grants to university staff. The members of the controlling body, the Council proper, are appointed by the Lieutenant-Governor in Council and consist of representatives of the government, the university and industry.

Research Council of Alberta.—The Province of Alberta set up a scientific and industrial Research Council in co-operation with the University of Alberta in 1921, the promotion of mineral development within the province being the chief purpose leading to its establishment. The present program is directed mainly toward the development of the natural resources of the province and toward the establishment of new industries within the province. The principal areas of activity are fossil fuels development and utilization, geological surveys and research, groundwater, soils, industrial minerals, chemical product and process development, microbiology, technical assistance to industry, gasoline and oil testing, pipeline transportation, highway research, river engineering, and hail research.

The operations of the organization are controlled by a Council of 10 individuals representative of Alberta Government, universities and industry. The various research fields are reviewed by advisory committees of specialists drawn from industry, the uni-

ersities and the provincial government. The programs of the Research Council of Alberta re financed principally by provincial government appropriations, although an increasing mount of income is derived from contract research.

The main Council laboratories and offices are located on the University of Alberta ampus in Edmonton. A pilot plant and laboratory facility is located in the Clover Bar rea east of the city. The full-time staff comprises approximately 200 scientists, engineers, echnologists and supporting personnel.

B.C. Research.—B.C. Research is the technical operation of a non-profit, industrial esearch society—the British Columbia Research Council—with offices and laboratories at 650 Wesbrook Crescent, Vancouver 8, B.C. Its function is to enable even the smallest rms to improve their competitive position in Canadian and world markets by the use of he most up-to-date scientific knowledge. B.C. Research carries out contract research for lients on a confidential basis, initiates "in-house" research programs designed to promote nd utilize the resources of the province, and provides a free technical information service n collaboration with the National Research Council. B.C. Research is active in the reas of applied biology, chemistry, engineering, physics, operations research, industrial ngineering, industrial market studies and economic feasibility studies.

ubsection 2.—Expenditures by Provincial Organizations on Scientific Activities

As stated in Subsection 1, eight provinces have established research councils or founda- ions, each having the primary role of assisting firms with technical problems and of aiding ith the development of provincial natural resources. Table 5 shows the approximate xpenditures of these establishments as reported in the latest DBS biennial survey of xpenditures on industrial research and development in Canada. There seem to be two ain differences between the pattern shown for these provincial establishments and that hown for industrial research and development expenditures as a whole—the first is that ages and salaries seem to account for a larger portion of current intramural costs and the econd is the relative unimportance of extramural payments.

5.—Expenditures on Research and Development by Provincial Research Councils and Foundations, 1965-70

Type	1965	1966	1967	1968	1969	1970[1]
	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000
ntramural Expenditures	**9.9**	**13.0**	**13.5**	**14.6**	**16.6**	**13.9**
Current—						
Wages and salaries	4.2	4.7	5.4	6.0	6.8	7.4
Other	2.8	3.3	3.0	4.3	4.6	4.8
Capital—						
Land and buildings	2.3	4.2	3.8	2.9	3.5	0.3
Equipment	0.6	0.8	1.3	1.4	1.7	1.4
xtramural Expenditures	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**
Totals, Expenditures	**10.0**	**13.1**	**13.6**	**14.7**	**16.8**	**14.1**

[1] Forecast by respondents.

As shown in Table 6, provincial governments are by far the most important source f funds, although some councils or foundations rely on them more than others. Payments or research and development contracts from Canadian industry are the second largest ource of revenue, the Federal Government providing most of the remaining funds. The ontribution of the Federal Government in 1969 was especially important as a source of the apital funds required by the councils and foundations. Table 7 shows that total personnel mployed by these establishments increased 21 p.c. from 1965 to 1969.

6.—Percentage Distribution of Funds for Research and Development Performed by Provincial Research Councils and Foundations, 1965, 1967 and 1969

Source	1965	1967	1969	Source	1965	1967	1969
	p.c.	p.c.	p.c.		p.c.	p.c.	p.c.
Self	3.0	3.0	6.0	Other Canadian	—	—	2.0
Provincial governments	65.0	64.0	50.0	Foreign	3.0	3.0	4.0
Federal Government	8.0	14.0	21.0				
Canadian industry	20.0	16.0	17.0	**Totals**	**100.0**	**100.0**	**100.0**

7.—Personnel Engaged in Research and Development by Provincial Research Councils and Foundations, 1965, 1967 and 1969

(Full-time equivalents)

Type	1965	1967	1969	Type	1965	1967	1969
	No.	No.	No.		No.	No.	No.
Scientists and Engineers	**253**	**268**	**311**	**Administrators**	**18**	**20**	**20**
Engineers	80	87	126	**Supporting Personnel**	**327**	**382**	**395**
Chemists	79	79	81	Technicians	168	198	220
Earth scientists	36	37	33	Workers	33	38	45
Other physical scientists	18	26	33	Others	126	146	130
Life scientists	34	32	22				
Other	6	7	16	**Totals, Personnel**	**598**	**670**	**726**

Section 4.—University Research*

The traditional role of universities, which is to generate, organize and transmit knowledge, makes essential their involvement in the performance of research and the kind of research they conduct is conditioned to a large extent by their special needs and responsibilities. Because it is important that faculty members remain at the forefront of knowledge in their discipline and at the same time retain the breadth required to organize and transmit new knowledge effectively, they have traditionally favoured basic research as the vehicle for the achievement of these objectives. The result has been that universities have become the principle performers of basic research in Canada. It is estimated that 70 p.c. of all research performed in the universities is in the category of basic research and this relatively high proportion is to some extent a reflection of the mechanisms by which Canadian university research is funded.

In Canada more than half of the total funds for sponsored, assisted and contract research comes from three agencies of the Federal Government—the National Research Council, the Medical Research Council and the Canada Council—whose purpose for supporting research is the healthy and balanced development of knowledge in Canadian universities rather than the support of a particular mission of their own. The university research support programs of these three agencies are broadly similar in the sense that they all award grants in response to initiatives from the universities and their criteria for support are based mainly on the merits of the individual researcher and the excellence of the project. The probable utility of the knowledge sought is generally not given high priority in assessing a project. These funding policies have favoured the development of basic research of a high calibre in Canadian universities.

The National Research Council has the responsibility for supporting research in the natural sciences and in engineering. It is the largest sponsor of research in Canada, having

* Prepared by Dr. P. Bourgault of the Science Council of Canada staff.

arded $45,800,000 in grants and scholarships in the academic year 1967-68, $59,000,000 in 68-69 and an estimated $65,000,000 in 1969-70. The Medical Research Council (MRC), der its new Act passed in 1969, assumes the responsibility for research support in all the ciplines in the health sciences. This represents an extension of its terms of reference ich previously had encompassed only medical research. In 1967-68, MRC's total earch support amounted to $20,500,000; in 1968-69 it rose to $27,000,000 and is expected reach $31,000,000 for the academic year 1969-70. Research support for the humanities d the social sciences is the responsibility of the Canada Council. In 1967-68, the Council tributed $11,500,000 in grants, fellowships and miscellaneous awards to researchers in e academic community; this increased to $16,500,000 in 1968-69 and to an estimated 9,300,000 in 1969-70. Other federal departments making large contributions to univer- y research in the form of grants, scholarships or contracts in 1967-68 were National alth and Welfare ($5,600,000), Atomic Energy Control Board ($2,500,000), and Defence search Board ($2,900,000). Federal departments making smaller contributions added a ther sum of about $7,000,000. In addition to these amounts from federal sources, iversities were the recipients of $15,000,000 in direct support for assisted research from e provinces, $2,800,000 from business and industry, $8,300,000 from foundations and sociations, and about $8,000,000 from miscellaneous other sources. This direct support sponsored, assisted and contract research, substantial though it may be, covers by no eans all of the costs of research performed in universities. In general, it corresponds proximately to the "direct" costs of research which include such items as equipment, pplies, salaries of technicians and the support of graduate students; it does not cover the ndirect" costs which are taken here to include the salaries of academics, plant maintenance, neral administration, etc. These indirect costs are difficult to assess accurately but they e generally conceded to exceed the direct costs (according to some estimates, by as much a factor of two*). Since they appear as part of the operating expenses of universities, direct costs are borne by the provinces who in turn pass on a portion of them to the Federal overnment through the mechanism of the fiscal transfer arrangements on post-secondary ucation.

The number of full-time university teachers in Canada for the academic year 1968-69 s estimated to be 23,500 most of whom were engaged in some research activity. There re 26,120 full-time graduate students enrolled in the same year, of whom 6,600 were in culties of pure science and 3,023 in faculties of applied science and engineering.

The almost explosive growth that occurred in university research during most of the 60s appears to be moderating as the 1970s begin. This is particularly noticeable in the ysical sciences and engineering, where some degree of maturity has been achieved in nadian universities and where future growth may be expected to continue at a more rmal rate. The humanities and social sciences, being relatively less well developed, may expected to have a few additional years of very rapid growth. Some noticeable trends ve occurred in recent years in Canadian university research that may be expected to ntinue and perhaps to accentuate in the years immediately ahead. Foremost among ese is the move to break down the rigid barriers that have existed between disciplines on iversity campuses. We are witnessing, with increasing frequency, the undertaking of ojects and the establishment of research institutes that depend on the co-operative initia- ve of two or more departments, faculties or even universities. Another relatively recent end has been toward a greater degree of specialization on the part of universities. Special ants (Negotiated Development Grants), made available by the National Research Council d by the Medical Research Council, give positive inducements to universities to follow is policy of specialization. Recent recommendations by the Science Council have vocated relatively more support for university research from the mission-oriented depart- ents, with the National Research Council, the Medical Research Council and the Canada uncil assuming more of a balancing role and ensuring that no legitimate discipline is glected.

* John B. Macdonald et al, *The Role of the Federal Government in Support of Research in Canadian Universities.* tawa, Information Canada, 1969.

Section 5.—Industrial Research

Subsection 1.—Industrial Research and Development Activities

Canadian firms are becoming increasingly involved in research and developmen activities, particularly those associated with fabrication and end-product manufacture The need to develop new or improved products to serve expanding domestic and foreig markets, to meet competition from other Canadian and foreign firms and to exploit effi ciently the country's natural resources has required industry to form and expand competen research and development units. In the present decade, capital and operating expendi tures for industrial research and development (R and D), encouraged by the growt in markets, production facilities, financial resources and supplies of technically skille manpower, have increased rapidly, as shown in the chart on p. 466, accompanied by growth in the professional and supporting personnel of about 10 p.c. per annum; capita expenditures have increased considerably since 1961.

The Federal Government recognizes the need for a strong research and developmen effort in Canada and has inaugurated several programs of direct assistance. The Depart ment of Industry, Trade and Commerce administers the Defence Industry Productivit Program and the Programme for the Advancement of Industrial Technology. The Nationa Research Council and the Defence Research Board make grants in support of industri research projects. In addition, the Industrial Research and Development Incentives Ac (IRDIA) authorizes the Department of Industry, Trade and Commerce to make substanti grants to firms expanding their research and development programs.

The Programme for the Advancement of Industrial Technology, which was establishe in 1965 as the civil counterpart of the Defence Industry Productivity Program, is of particula interest because of its innovative slant and selective nature. Its basic aim is to hel Canadian secondary industry upgrade its technology and expand its innovative activit by underwriting the technical and market risks of specific product or process developmen projects which involve a significant advance in technology and which, if successful, offe good prospects for commercial exploitation in domestic and foreign markets. Priority goe to projects which increase productivity or otherwise contribute directly to attain a uniqu capability or technical leadership, taking advantage, where possible, of Canada's natura resources and skills.

In recent years the total direct federal support for industrial research and developmen (incentive schemes and contracts) has been as follows:*—

Year	Amount
	$'000,000
1965–66	65.6
1966–67	58.9
1967–68	60.7
1968–69 (projected)	79.9
1969–70 (estimated)	102.9

Employment Related to Research and Development Activities.—The level employment of scientists and engineers in the various areas of industrial research an development gives a measure of the corresponding activity. The first 10 industries rank follows (1967):—

Rank	Industry	Scientists and Engineers in R and D	Percentage of Total
		No.	
1	Electrical products	2,021	27.0
2	Chemical products (other than drugs and medicines)	1,059	14.2
3	Aircraft and parts	741	9.9
4	Paper	488	6.5
5	Primary metals (non-ferrous)	399	5.3
6	Drugs and medicines	362	4.8
7	Scientific and professional instruments	333	4.5
8	Petroleum products	303	4.1
9	Machinery	273	3.6
10	Food and beverages	247	3.3
	Other industries	1,241	16.8
	All Industries	7,467	100.0

* *Science Council of Canada; Third Annual Report 1968-69*, p. 9.

The above 10 industries absorb some 83 p.c. of the scientists and engineers employed in research and development and represent more than half the sales volume of Canadian industry in 1967. The first three industries alone employ more than 50 p.c. of R and D personnel in Canada, and account for over 50 p.c. of all current intramural expenditures on R and D. About 20 p.c. of the scientists and engineers in industry have advanced degrees; equally divided between master of science and doctorate degrees, at about 13 p.c. each.

One possible method of identifying research-intensive industries is to compare the number of scientists and engineers involved in R and D with the total number of persons employed by the industry. Based on this criterion, the 10 leading industries are as follows (1967):—

Rank	*Industry*	*R and D Scientists and Engineers per 1,000 Employees*
1	Drugs and medicines	46.4
2	Scientific and professional instruments	39.6
3	Non-manufacturing industries (other than transportation and other utilities)	29.6
4	Aircraft and parts	23.2
5	Electrical products	20.7
6	Chemical products (other than drugs and medicines)	18.2
7	Gas and oil wells	17.8
8	Rubber	10.9
9	Petroleum products	10.1
10	Primary metals (non-ferrous)	8.2

For all industries reporting, there were 7.7 scientists and engineers per 1,000 employees. The above industries accounted for about one third of total industry sales of some $27,000,000,000 in 1967.

Laying an anti-pollution cable beside a pipeline during installation of suburban domestic services. Several years of research by a private company resulted in the development of a wire-insulating material that immediately begins to dissolve from any underground leak, no matter how small, short-circuiting the cable and pinpointing the position of the leak before any great damage is done.

Subsection 2.—Industrial Research and Development Expenditures

The latest biennial DBS survey of expenditures on industrial research and development in Canada was carried out in 1968 and gives figures for the period 1965-68. Results appear in DBS publication *Industrial Research and Development Expenditures in Canada, 1967*, and are summarized in this Subsection.

Spending on scientific research and development by Canadian industry almost doubled during the period 1963-68, increasing from $211,700,000 to $385,300,000. Intramural expenditures moved steadily upward during the period from $153,200,000 to $302,500,000, while capital expenditures reached a peak in 1966 at $50,700,000 and then declined to $44,100,000 in 1968. This decline might be attributed to the high cost of borrowed money in 1967 and 1968 as well as to the fact that research installations on which expenditures had been heavy in preceding years were completed. The size of extramural research and development payments made abroad by Canadian companies did not increase very much between 1963 and 1968, but in 1967 companies reported spending abroad about twice as much money as they received for research purposes from other countries.

8.—Total Industrial Research and Development Expenditures, 1963-68

Item	1963	1964	1965	1966	1967	1968[1]
	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000
Current Expenditures—						
Intramural costs	153.2	189.4	236.8	266.4	292.9	302.5
Wages and salaries	*81.2*	*95.6*	*120.2*	*138.2*	*160.3*	*164.2*
Other	*72.0*	*93.8*	*116.6*	*128.2*	*132.6*	*138.3*
Extramural payments	30.8	35.4	29.3	30.5	37.8	38.7
In Canada[2]	*1.4*	*1.6*	*2.2*	*2.3*	*3.3*	*3.4*
Outside Canada	*29.4*[3]	*33.8*[3]	*27.1*	*28.2*[3]	*34.5*	*35.3*[3]
Totals, Current Expenditures	**184.0**	**224.8**	**266.1**	**296.9**	**330.7**	**341.2**
Capital Expenditures—						
Land and buildings	10.6	14.8	15.7	18.4	13.6	10.6
Equipment	17.1	31.7	34.8	32.3	31.3	33.5
Totals, Capital Expenditures	**27.7**	**46.5**	**50.5**	**50.7**	**44.9**	**44.1**
Totals, All Expenditures	**211.7**	**271.3**	**316.6**	**347.6**	**375.6**	**385.3**

[1] Forecast by respondents. [2] Adjusted by DBS to remove those payments made by one Canadian firm to another, since such payments are covered in the intramural costs. [3] DBS estimate.

Table 9 shows the current intramural research and development expenditures by performing industries. In 1967, three industries—electrical products, aircraft and chemical products—accounted for about 55 p.c. of the total expenditures. Since 1955, the year of the first survey, these industries have spent more for current intramural research and development than all others combined.

).—Current Intramural Research and Development Expenditures, by Industry, 1963-68

Industry	1963	1964	1965	1966	1967	1968[1]
	$'000	$'000	$'000	$'000	$'000	$'000
nes	5,151	6,818	6,876	7,901	9,842	9,170
s and oil wells	688	1,293	1,567	2,600	2,724	2,509
nufacturing—						
Food and beverages	3,788	4,543	5,447	6,788	7,807	8,415
Rubber	1,903	2,099	2,339	3,058	3,543	3,831
Textiles	2,597	2,816	3,141	3,801	3,700	4,027
Wood	154	195	333	379	856	658
Furniture and fixtures	118	127	104	111	157	184
Paper	10,985	14,389	14,983	19,031	18,519	19,550
Primary metals (ferrous)	3,014	3,777	5,555	5,179	5,234	5,446
Primary metals (non-ferrous)	9,054	9,183	10,771	11,894	14,766	12,629
Metal fabricating	3,646	3,170	2,192	2,731	4,488	5,465
Machinery	6,496	7,743	8,358	10,562	13,062	13,341
Aircraft and parts	30,846	40,526	57,186	50,048	40,011	41,626
Other transportation equipment	675	1,811	2,149	2,345	3,150	3,697
Electrical products	30,956	40,015	57,840	68,801	83,261	85,841
Non-metallic mineral products	1,916	1,889	1,665	2,103	2,711	3,080
Petroleum products	7,699	8,655	11,560	13,566	16,629	20,089
Drugs and medicines	4,413	5,583	6,104	7,915	9,556	10,574
Other chemical products	17,985	20,308	24,471	29,066	31,539	29,052
Scientific and professional instruments	5,007	5,366	6,846	8,787	9,031	9,487
Other manufacturing	2,344	3,470	1,604	1,983	2,560	2,609
Totals, Manufacturing	143,596	175,665	222,648	248,148	270,580	279,601
ansportation and other utilities	3,172	3,181	3,095	3,664	4,535	6,429
her non-manufacturing	987	1,396	2,629	4,093	5,248	4,777
Totals, All Industries	**153,594**	**188,353**	**236,815**	**266,406**	**292,929**	**302,486**

[1] Forecast by respondents.

Because of difficulties of interpretation and estimation, the figures shown in Table **10** nnot be more than approximations. However, they do indicate that the applied research d development performed within an industrial group may be for the benefit of some other lated industry or for a new 'industry'. Furthermore, company groups may have been signed to one industry, whereas the activities of the group, including research and velopment, may actually cover several industries. For example, applied research and velopment for the aircraft industry was largely for other products—about $28,500,000 as spent on aircraft, $2,500,000 on guided missiles and space vehicles, and $11,800,000 on her transportation equipment.

10.—Current Intramural Applied Research and Development Expenditures, by Product Group, 1967

Product Group	Amount	P.C. of Total	Product Group	Amount	P.C. of Total
	$'000,000			$'000,000	
ining, extraction of mineral fuels	5.8	2.1	Household electrical products	1.6	0.6
ood and beverages	7.3	2.6	Other electrical products	4.1	1.5
ubber products	4.3	1.5	Drugs and medicines	7.7	2.8
extiles	7.6	2.7	Industrial chemicals	8.9	3.1
orest products	12.7	4.6	Mixed fertilizers	1.1	0.4
rimary metals	26.3	9.4	Plastics and synthetic resins	11.4	4.1
abricated metal products	5.7	2.0	Other	7.1	2.5
achinery	17.3	6.2	Petroleum products	12.2	4.3
ircraft	28.5	10.2	Non-metallic mineral products	2.5	0.9
uided missiles and space vehicles	2.5	0.9	Scientific and professional instruments	5.4	1.9
otor vehicles	1.6	0.6	Other	8.3	3.0
ther transportation equipment	11.8	4.3			
lectronic equipment and computers	66.9	24.0			
lectrical industrial apparatus	10.7	3.8	**Totals, All Groups**	**279.1**	**100.0**

Table 11 gives sources of funds for total current and capital research and developmen expenditures. For all Canadian industry, the performing company is by far the mos important source of funds, providing over 77 p.c. of such funds in 1967. However, sinc capital expenditures are not usually financed by governments or other companies supportin a firm's research and development program, the performing company would be a les dominant source of funds for current intramural expenditures—perhaps accounting fo about 70 p.c. rather than 77 p.c. Other significant sources are the Federal Governmen foreign governments and foreign related companies. Industries and firms do not rely o the same sources to the same extent. For example, about 72 p.c. of the research an development funds for the scientific and professional instruments industry seems to com from outside the performing company; the direct support of the Federal Governmen goes mainly to two industries—aircraft (40 p.c.) and electrical products (36 p.c.); an funds from foreign sources account for about 50 p.c. of intramural expenditures for th scientific and professional instruments industry.

11.—Sources of Funds for Intramural Research and Development, by Industry, 1967[1]

Industry	Canadian Sources				Foreign Sources[3]	Total
	Reporting Company	Parent Affiliated and Subsidiary Companies	Government of Canada	Other[2]		
	$'000	$'000	$'000	$'000	$'000	$'000
Mines	9,480	47	544	406	200	10,677
Gas and oil wells	1,068	1,454	—	166	589	3,277
Manufacturing—						
Food and beverages	8,173	27	567	92	—	8,859
Rubber	2,822	—	482	—	550	3,854
Textiles	3,392	45	165	19	410	4,031
Wood	1,080	—	261	—	—	1,341
Furniture and fixtures	157	—	—	—	—	157
Paper	20,773	1,204	777	2,494	897	26,145
Primary metals (ferrous)	5,749	—	442	27	7	6,225
Primary metals (non-ferrous)	18,382	945	436	169	134	20,066
Metal fabricating	3,891	349	290	46	280	4,856
Machinery	12,343	50	808	71	495	13,767
Aircraft and parts	20,769	—	18,800	246	1,110	40,925
Other transportation equipment	2,994	—	135	—	472	3,601
Electrical products	72,380	3,262	16,754	85	2,240	94,721
Non-metallic mineral products	2,893	—	453	—	—	3,346
Petroleum products	20,718	—	93	6	676	21,493
Drugs and medicines	7,871	—	623	1	1,992	10,487
Other chemical products	33,784	213	1,108	—	1,437	36,542
Scientific and professional instruments	2,572	—	2,474	102	4,056	9,204
Other manufacturing	2,702	106	250	—	21	3,079
Totals, Manufacturing	243,445	6,201	44,918	3,358	14,777	312,699
Transportation and other utilities	5,437	—	82	2	—	5,521
Other non-manufacturing	1,224	—	1,519	1,523	1,369	5,634
Totals, All Industries	**260,654**	**7,702**	**47,063**	**5,455**	**16,935**	**337,809**
Percentage of total funds	77.2	2.3	13.9	1.6	5.0	100.0

[1] Includes capital expenditures. [2] Includes the membership fees of research institutes and payments research and development performed under contract for non-related companies. [3] Includes foreign gove ments.

Section 6.—International Comparisons

A comparison of gross domestic research and development (R and D) expenditures in ganization for Economic Co-operation and Development (OECD) countries is given in able **12**. Within this group of countries, there are wide differences in total resources, in pulation, in defence commitments, and in industrial, commercial, social and political ructure. Comparisons are therefore difficult. Moreover, the criteria used to obtain ese statistics may vary from country to country.

12.—Gross Domestic R and D Expenditures in OECD Countries and Current Expenditures by Type of Activity

SOURCES: *International Statistical Year for R and D*, Vol. 2: Statistical Tables and Notes, OECD, Paris, 1968. tional statistics of Canada, France, Italy and Japan.

Country and Year	Gross Domestic R and D Expenditures	Comparison with United States 1,000	Current Intramural Expenditures by Type of Activity					
			Development		Applied Research		Fundamental Research	
			Expenditures	United States 1,000	Expenditures	United States 1,000	Expenditures	United States 1,000
	$'000,000		$'000,000		$'000,000		$'000,000	
ited States (1963–64)....	21,075.0	1,000.0	12,174.1	1,000.0	4,089.2	1,000.0	2,413.8	1,000.0
ited Kingdom (1964–65).	2,159.9	101.3	1,127.0	92.5	478.0	117.0	230.0	95.4
ance (1964).....	1,650.0	78.5	617.0[1]	...	433.0	...	221.0	...
rmany (1964).....	1,436.3	67.3	..	..	..	..	..	..
pan (1964–65).....	1,060.0	50.5	..	..	..	..	..	..
nada (1965).....	630.5	30.0	195.4	16.0	215.5	52.5	118.4	49.0
ly (1965).....	356.7	16.9	130.4[1]	...	155.7	...	70.6	...
therlands (1964).....	330.0	15.7	118.0[1]	...	115.3	...	81.5	...
eden (1964).....	257.0	12.1	..	..	..	..	..	..
lgium (1963).....	137.0	6.5	39.8	3.3	43.2	10.1	22.1	9.2
rway (1963).....	42.4	2.0	14.6	1.2	11.5	2.8	7.5	3.1
ain (1964).....	31.0	1.3	4.1	0.3	11.1	2.7	7.3	3.0
rkey (1964).....	27.5	1.3	..	..	..	..	..	..
stria (1964).....	23.2	1.1	10.4[1]	...	7.6	...	5.2	...
land (1963).....	10.5	0.5	4.2[1]	...	5.2	...	0.3	...
rtugal (1964).....	9.0	0.4	..	..	..	..	..	..
eece (1964).....	7.9	0.4	1.4	0.1	3.3	0.8	1.5	0.6
EC.....	3,493.2	165.0	..	..	..	..	..	..
ECD Europe.....	6,070.6	287.0	..	..	..	..	..	..

[1] Total intramural expenditures (France 1963).

In the OECD publication *Reviews of National Science Policy—Canada* (1969), an tempt was made to compare gross domestic R and D expenditures for economic and cial purposes by separating expenditures in military research, atomic research and space search from the aggregate figures. As can be seen from Table **13**, the results obtained ve a completely different picture from that obtained by comparing total R and D expentures.

13.—Comparative Importance of R and D Expenditures in OECD Countries

SOURCES: *International Statistical Year for R and D*, Vol. 1, "The Overall Level and Structure of R and D Effor in OECD Member Countries", OECD, Paris, 1967. OECD, *Manpower Statistics, 1954-1964, 1965.*

Country	Gross Domestic R and D Expenditures per Capita	Gross R and D Expenditures for Economic and Social Purposes[1] per Capita	Gross Domestic R and D Expenditure for Economic and Social Purposes per Person Employed
	$	$	$
United States	110.5	34.5	91.0
United Kingdom	39.8	24.0	51.0
France	34.0	19.0	46.0
Sweden	33.5	22.1	47.0
Canada	32.0	23.7	68.0
Netherlands	27.2	25.8	72.0
Germany	24.6	20.4	45.0
Belgium	14.7	14.1	37.0
Norway	11.6	10.0	25.0
Japan	9.3	9.3	19.0
Italy	6.8	5.4	14.0
Ireland	3.5	3.5	9.0
Austria	3.2	2.8	6.0
Spain	1.0	0.8	2.0
Greece	0.9	0.6	1.5
Portugal	0.9	0.9	1.5
Turkey	0.9	..	..

[1] Objectives other than military and defence research, atomic and space research.

Total R and D staff and qualified scientists and engineers in OECD countries is giv in Table **14.**

14.—R and D Staff and Qualified Researchers and Engineers in OECD Countries

SOURCES: *International Statistical Year for R and D*, Vols. 1 and 2. C. Freeman and A. Young: "The Resear and Development Effort in Western Europe, North America and the Soviet Union", OECD, Paris, 1965. OEC *Manpower Statistics 1954-1964, 1965.*

Country	Total R and D Staff	Qualified Researchers and Engineers	Active Population Employed	Total R and D Staff to Active Population Employed	Qualified Researche and Engine to Activ Populatio Employe
	No.	No.	'000	p.c.	p.c.
United States	1,300,000	496,500	70,357	1.85	0.70
Japan[1]	289,290	114,840	46,130	..	..
United Kingdom	215,000	59,415	25,007	0.86	0.24
Germany	187,010	33,380	26,523	0.71	0.13
France	133,570	32,540	19,037	0.70	0.17
Netherlands	43,140	9,230	4,310	1.00	0.22
Italy	42,660	19,410	19,475	0.22	0.10
Canada	37,530	13,430	6,375	0.59	0.21
Sweden	24,690	16,530	3,719	0.67	0.44
Belgium	20,320	5,540	3,525	0.58	0.16
Spain	8,390	3,860	12,030	0.07	0.03
Austria	6,510	2,030	3,335	0.19	0.06
Norway	5,610	2,290	1,456	0.34	0.16
Portugal	4,322	1,134	3,380	0.13	0.03
Ireland	2,440	850	1,048	0.23	0.08
Greece	2,000	820	3,450	0.06	0.02
Turkey	..	..	..	..	..

[1] Not available in full-time equivalent.

CHAPTER IX.—CRIME AND DELINQUENCY*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

Section 1.—Canadian Criminal Law and Procedure†

The system under which justice is administered in a State is never rigid. To have it so would be neither expedient nor indeed possible. A judicial system must grow and adapt itself to the requirements of the people, and the exact limits of the powers of different legislative bodies require continued definition.

The criminal law of Canada has as its foundation the criminal common law of England built up through the ages and consisting first of customs and usages and later expanded by principles enunciated by generations of judges. There is no statutory declaration of the introduction of English criminal law into those parts of Canada that are now the Provinces of New Brunswick, Nova Scotia and Prince Edward Island. Its introduction there depends upon a principle of the common law itself by which English law was declared to be in force in uninhabited territory discovered and planted by British subjects, except in so far as local conditions made it inapplicable. The same may be said of Newfoundland although the colony dealt with the subject in a statute of 1837. In Quebec its reception depends upon a Royal Proclamation of 1763 and the Quebec Act of 1774. In each of the other provinces and in the Yukon and Northwest Territories the matter has been dealt with by statute.

The judicial systems of the provinces as they exist today are based upon the British North America Act of 1867. Sect. 91 of the Act provides that "The exclusive legislative authority of the Parliament of Canada extends to . . . the criminal law, except the constitution of courts of criminal jurisdiction but including the procedure in criminal matters". By Sect. 92 (14), the legislature of the province exclusively may make laws in relation to "the administration of justice in the province, including the constitution, maintenance and

* Except as otherwise credited, this Chapter has been revised in the Judicial Section, Health and Welfare Division, Dominion Bureau of Statistics.

† Revised by the Criminal Law Section, Department of Justice, Ottawa.

organization of provincial courts, both of civil and criminal jurisdiction and including procedure in civil matters in its courts". The Parliament of Canada may, however (Sect. 101), establish any additional courts for the better administration of the laws of Canada. It should be noted that the Statute of Westminster, 1931 effected important changes, particularly by abrogating the Colonial Laws Validity Act, 1865 (Br.) and confirming the right of a dominion to make laws having extraterritorial operation. Particulars of the federal and provincial judiciaries are given in Chapter II, pp. 97-107.

At the time of Confederation each of the colonies affected had its own body of statutes relating to the criminal law. In 1869, in an endeavour to assimilate them into a uniform system applicable throughout Canada, Parliament passed a series of Acts, some of which dealt with offences of special kinds and others with procedure. Most notable of the latter was the Criminal Procedure Act, but other Acts provided for the speedy trial or summary trial of indictable offences, the powers and jurisdiction of justices of the peace in summary conviction matters and otherwise, and the procedure in respect of juvenile offenders.

Codification of the criminal law through a Criminal Code Bill founded on the English draft code of 1878, Stephen's *Digest of Criminal Law*, Burbidge's *Digest of the Canadian Criminal Law*, and the relevant Canadian statutes was brought about by the Minister of Justice, Sir John Thompson, in 1892. This Bill became the Criminal Code of Canada and came into force on July 1, 1893. It must be remembered, however, that the Criminal Code was not exhaustive of the criminal law. It was still necessary to refer to English law in certain matters of procedure and it was still possible to prosecute for offences at common law. Moreover, Parliament has declared offences against certain other Acts, e.g., the Narcotic Control Act, to be criminal offences and the same was done in the Defence of Canada Regulations and the Wartime Prices and Trade Board Regulations (neither now in force) promulgated under the authority of the War Measures Act.

It is often difficult to distinguish between 'law' and 'procedure'. Procedure may be interpreted to relate simply to the organic working of the courts but, in a wider sense it may also affect the rights or alter the legal relations arising out of any given state of facts. For present purposes it will be useful to note that writers on jurisprudence describe law as being substantive or adjective. "Substantive law is concerned with the ends which the administration of justice seeks; procedural (adjective) law deals with the means and instruments by which these ends are to be obtained."* With reference to the criminal law, the former may be taken to include the provisions concerning criminal responsibility the definition of 'offences' and the punishment for those offences, and the latter to include provisions for enforcement, e.g., powers to search and to arrest, for the modes of trial and for the proof of facts. Broadly speaking, the Criminal Code observes the distinction although it might appear that the provisions for preventive detention of habitual criminals and dangerous sexual offenders partake of the nature of both classes.

An examination and study of the Criminal Code was authorized by Order in Council dated Feb. 3, 1949, and the Commission assigned the task of revising the Code presented its report with a draft Bill in February 1952. After coming before successive sessions of Parliament it was finally enacted on June 15, 1954 and the new Criminal Code (SC 1953-54 c. 51) came into effect on Apr. 1, 1955. Since the new Code came into force several amendments have been made, for the most part in relation to procedure. Among the most notable of these, as well in point of procedure as of substance, are: an amendment in 1956 providing that motions for leave to appeal to the Supreme Court of Canada in criminal cases should be heard by a quorum (at least five) of judges of that Court instead of by a single judge amendments effected by SC 1959, c. 41, providing a statutory extension of the definitio

* Salmond on *Jurisprudence*, 7th Edition, p. 496.

"obscenity" and making provision for seizure and condemnation of offending material without a charge necessarily being laid against any person; extensive amendments relating to the allowing of time for payment of fines; amendments dealing with offences committed in aircraft in flight over the high seas; an amendment forbidding the publication in a newspaper or broadcast of a report that any admission or confession was tendered in evidence at a preliminary inquiry or a report of the nature of such admission or confession unless the accused has been discharged or, if the accused has been committed for trial, the trial has ended.

The Parole Act (SC 1958, c. 38), brought into force on Feb. 15, 1959, revises the parole system and provides for the establishment of a National Parole Board (see pp. 529-530).

It is most important to note that in 1960 (SC 1960, c. 44) Parliament enacted what is known as the Canadian Bill of Rights. Although the Act sets out further details, its general scope appears in Sect. 1, which reads as follows:—

> "1. It is hereby recognized and declared that in Canada there have existed and shall continue to exist without discrimination by reason of race, national origin, colour, religion or sex, the following human rights and fundamental freedoms, namely,
>
> (*a*) the right of the individual to life, liberty, security of the person and enjoyment of property, and the right not to be deprived thereof except by due process of law;
>
> (*b*) the right of the individual to equality before the law and the protection of the law;
>
> (*c*) freedom of religion;
>
> (*d*) freedom of speech;
>
> (*e*) freedom of assembly and association; and
>
> (*f*) freedom of the press."

Although the Bill of Rights has been invoked on various occasions, the courts have not held it to affect the operation of the Criminal Code.

In 1961 (SC 1960-61, cc. 43-44), the offence of murder was divided into capital and non-capital, the death penalty was abolished in relation to the offence of non-capital murder, and the term *criminal sexual psychopath* was dropped and the term *dangerous sexual offender* substituted; in 1965 (SC 1964-65, c. 53) provision was made for the right to appeal in *habeas corpus* proceedings.

The concept of "non-capital murder" was introduced into Canadian criminal law in 1961. At that time, capital murder was defined to include, for example, planned and deliberate murder, murder in the course of certain violent acts and murder of peace officers and prison officers. Life imprisonment was substituted for the death penalty in cases where the accused was convicted of non-capital murder. In 1966, the House of Commons, in a free vote, rejected a Bill under which the death penalty for murder would have been completely abolished but in 1967 (SC 1967-68, c. 15) an Act was passed under which the definition of capital murder is restricted to the murder of peace officers or prison officers. This Act was brought into force on Dec. 29, 1967, and will continue in force for a period of five years from that day. The Act will then expire unless before the end of the five-year period Parliament by a joint resolution of both Houses directs that it shall continue in force. If the Act is not continued in force before the expiry of the five-year period, the broader definition of capital murder introduced in 1961 will again come into operation. It should be noted that the law contains a provision whereby a person in respect of whom sentence of death has been commuted or a person who has been sentenced to life imprisonment for capital murder shall not be released without the prior approval of the Governor in Council.

The most comprehensive amendments to the Criminal Code since it came into force on Apr. 1, 1955 are contained in the Criminal Law Amendment Act (SC 1968-69, c. 38)

which was assented to on June 27, 1969 and, with certain exceptions, came into force on Aug. 26, 1969. Among the changes are amendments relating to gaming and lotteries, "drinking and driving", homosexual acts and therapeutic abortion.

The provisions with respect to lotteries, which came into force on Jan. 1, 1970, make it lawful for the Federal Government to conduct a lottery and for a provincial government to pass legislation enabling it to conduct a lottery either alone or in conjunction with one or more other provincial governments. Provincial authorities may issue licences under which charitable and religious organizations may be authorized to conduct lotteries and games and under which agricultural fairs and exhibitions are no longer restricted to lotteries and games conducted on the exhibition grounds.

Under the amendment, a person is guilty of an offence if he drives a motor vehicle while the proportion of alcohol in his blood exceeds 80 milligrammes of alcohol in 100 millilitres of blood. It is compulsory for a driver to take a blood test when required to do so by a peace officer who has reasonable and probable grounds to believe that the person's ability to drive is impaired and it is an offence for a person to fail or refuse without reasonable excuse to take a blood test when so required. Where such blood test is taken within two hours of the alleged offence and the various conditions set out in the legislation relating to the taking of the test are complied with, the result of the test is *prima facie* evidence of the proportion of alcohol in the driver's blood. This amendment came into force on Dec. 1, 1969, with the exception of those provinces dealing with the alcohol breathalyzer legislation which refers to the specimen of breath to be given to the accused in an approved container for his use at the time the breath sample is taken. The proclamation of these provisions awaits the development of a suitable container.

The amendment contains provisions whereby therapeutic abortion is not unlawful where the operation is carried out after the therapeutic abortion committee of an accredited hospital has certified that the continuation of the pregnancy would or would be likely to endanger the life or health of the female. The operation may be performed only by a duly qualified medical practitioner and only in an accredited hospital or a hospital approved for the purpose by the Minister of Health of a province, who is also entitled to information relating to the issue of a certificate and to the operation.

The amendment removes from the ambit of the criminal law homosexual acts committed in private between two consenting adults.

As noted earlier in this Section, an amendment was made to the Criminal Code in 1959 restricting the publication of an admission or confession at a preliminary inquiry. Under the new amendment, provision is made whereby, on the application of the accused, the magistrate or justice holding a preliminary inquiry may make an order forbidding publication of *any* of the evidence until the accused has been discharged or, if he has been committed for trial, the trial has ended. Apart from such an order, the prohibition against publishing an admission or confession remains.

Previously, where there was reason to believe that the accused person was unfit on account of insanity to stand trial, the issue of his fitness to stand trial was decided as soon as it arose. If the court decided that the accused was not fit to stand trial, he was detained in custody at the pleasure of the Lieutenant-Governor. As the merits of the case against him were not tried, it was possible for an innocent person to be so detained. Under the amendments, the court has the power to postpone dealing with the issue of fitness to stand trial until after the prosecutor has presented his evidence. If the prosecutor's evidence is not sufficiently strong to make out a case, the accused may be acquitted and set free. If he requires treatment for a mental condition, he may be dealt with under the applicable

vincial mental health legislation instead of under the Criminal Code. In addition, in er to safeguard the rights of those persons who are found unfit to stand trial and therefore ained in custody, the Lieutenant-Governor of the province is authorized to appoint a rd to review at least every six months the case of every person so detained, also to review east every six months the case of every person who is held in custody in the province owing an acquittal on account of insanity at the time the offence was committed.

In regard to sentence, the amendment contains provisions enabling courts to make e liberal use of suspended sentences, with or without probation. The amendments ove the previous restriction which prevented the court from suspending the passing sentence when the offender had more than one previous conviction; enable probation ers to be transferred from one province to another; enable the court to make a probation er in addition to a sentence of imprisonment not exceeding two years; and make it a stantive offence, punishable on summary conviction, for a person on probation wilfully efuse to comply with the probation order.

The new legislation also contains amendments relating to appeals by way of new trial ummary conviction cases which are designed to make the institution of such appeals complicated and costly. For example, it is no longer necessary, as formerly, for the ellant to provide a transcript of the evidence taken at his trial unless the appeal court cifically orders him to do so. The definition of "dangerous sexual offender", introduced 1961 (SC 1960-61, cc. 43-44), is narrowed to give the court of appeal express power to er a new hearing in the case of an appeal arising out of an application for preventive ention of a person as a habitual criminal or as a dangerous sexual offender.

Section 2.—Adult Offenders and Convictions

Offences may be classified under two headings, "indictable offences" and "offences ishable on summary conviction". Indictable offences are grouped in two main categories: (1) offences that violate the Criminal Code and (2) offences against federal statutes. ese include the more serious crimes. Offences punishable on summary conviction—se not expressly made indictable—include offences against the Criminal Code, provincial tutes and municipal by-laws. It is debatable how far some summary conviction offences of a criminal nature and whether their increase indicates an increase in crime. Many breaches of municipal by-laws and contrary to public safety, health and comfort, as, for mple, parking violations or practising trades without licence but, on the other hand, mmary conviction offences may include such serious charges as assault and contributing juvenile delinquency.

The following Subsection 1 deals with adults convicted of indictable offences, Subtion 2 with young adult offenders convicted of indictable offences, Subsection 3 with nvictions for summary conviction offences and Subsection 4 with appeals.

Subsection 1.—Adults Convicted of Indictable Offences

Statistics of indictable crimes are based on persons, so that it may be possible to aluate the population engaged in prohibited activities and to help in the treatment anti-social behaviour in terms of subject-centred action. In the present counting tem, although individuals may be charged with more than one offence, only one offence tabulated for each person. This offence is selected according to the following criteria:

(1) if the person were tried on several charges, the offence selected is that for which proceedings were carried to the farthest stage—conviction and sentence; (2) if there were several convictions, the offence selected is that for which the heaviest punishment was awarded; (3) if the final result of proceedings on two or more charges were the same, the offence selected is the more serious one, as measured by the maximum penalty allowed by the law; (4) if a person were prosecuted for one offence and convicted of another—for example, charged with murder and convicted of manslaughter—the offence selected is the one for which the person was convicted.

In 1967 there were 51,388 adults charged with 86,689 indictable offences, of whom 45,703 were found guilty of 76,681 offences. In the previous year there were 51,080 adults charged with 89,176 indictable offences, of whom 45,670 were found guilty of 79,865 offences.

1.—Persons Charged and Persons Convicted of Indictable Offences, with Ratio per 100,000 Population 16 Years of Age or Over, by Province, 1966 and 1967

Province or Territory	Persons Charged		Persons Convicted				Persons Convicted per 100,000 Population 16 Years of Age or Over	
	1966	1967	1966		1967		1966	1967
	No.	No.	No.	p.c.	No.	p.c.	No.	No.
Newfoundland	795	541	784	98.6	531	98.1	269	184
Prince Edward Island	110	129	107	97.3	120	93.0	154	173
Nova Scotia	1,694	1,697	1,517	89.6	1,516	89.3	310	309
New Brunswick	1,338	1,385	1,293	96.6	1,334	96.3	332	345
Quebec	11,185	10,082	10,102	90.3	9,125	90.5	272	239
Ontario	17,946	18,441	15,745	87.7	16,025	86.9	343	335
Manitoba	2,773	2,935	2,482	89.5	2,689	91.6	391	419
Saskatchewan	2,219	2,346	2,052	92.5	2,156	91.9	334	347
Alberta	4,890	5,134	4,508	92.2	4,735	92.2	488	499
British Columbia	7,759	8,474	6,750	87.0	7,267	85.8	535	548
Yukon and Northwest Territories	371	224	330	88.9	205	91.5	1,454	820
Canada	**51,080**	**51,388**	**45,670**	**89.4**	**45,703**	**88.9**	**352**	**341**

Table 2 classifies indictable offences by type of offence for 1966 and 1967. Class I covers offences against the person and in 1967 there were 6,217 males and 293 females convicted in this category, mostly for assaults of various kinds. Classes II to IV deal with offences against property. Thefts predominate among the offences in these classes, and breaking and entering, extortion and robbery—serious crimes which involve acts of violence—are the next most numerous. Class V deals with offences relating to currency and Class VI with miscellaneous offences; among the latter, the most numerous convictions are for offences connected with gaming, betting and lotteries. In 1967 there were 768 men and 19 women convicted under federal statutes of whom 730 men and 190 women were offenders under the Narcotic Control Act.

2.—Persons Charged and Convicted of Indictable Offences, by Class of Offence, 1966 and 1967

Class of Offence	1966			1967		
	Persons Charged	Persons Convicted		Persons Charged	Persons Convicted	
		M.	F.		M.	F.
	No.	No.	No.	No.	No.	No.
Criminal Code						
Class I.—Offences against the Person	**8,365**	**6,582**	**366**	**7,957**	**6,217**	**293**
Abduction and kidnapping	57	35	2	63	46	—
Assault, causing bodily harm, common, on police and obstruction	6,009	4,833	264	5,476	4,367	220
Offences against females[1]	1,037	770	31	1,029	742	18
Causing death by criminal negligence,[2] manslaughter and murder	198	130	12	248	158	10
Attempted murder, causing bodily harm and danger	265	183	16	292	192	24
Criminal negligence in operation of motor vehicle	39	37	—	23	22	—
Duties tending to preservation of life	13	9	—	14	9	1
Other offences against the person	747	585	41	812	681	20
Class II.—Offences against Property with Violence	**8,676**	**7,817**	**148**	**8,955**	**8,012**	**167**
Breaking and entering a place, extortion and robbery	8,676	7,817	148	8,955	8,012	167
Class III.—Offences against Property without Violence	**26,203**	**19,414**	**4,525**	**26,187**	**19,244**	**4,615**
Fraud and false pretences	2,981	2,264	356	2,980	2,260	365
Having in possession	2,742	2,260	124	3,003	2,467	129
Theft	20,480	14,890	4,045	20,204	14,517	4,121
Class IV.—Malicious Offences against Property	**1,428**	**1,191**	**59**	**1,394**	**1,167**	**53**
Arson and other fires	176	131	8	141	106	9
Other interference with property	1,252	1,060	51	1,253	1,061	44
Class V.—Forgery and Other Offences Relating to Currency	**1,247**	**992**	**159**	**1,335**	**1,059**	**167**
Forgery and uttering forged documents	1,155	928	151	1,204	963	156
Offences relating to currency	92	64	8	131	96	11
Class VI.—Other Offences	**4,545**	**3,616**	**373**	**4,277**	**3,420**	**326**
Driving while ability to drive is impaired	368	301	8	210	168	2
Driving while intoxicated	21	20	—	7	6	—
Gaming, betting and lotteries	889	766	70	663	586	43
Keeping bawdy houses	177	31	136	155	26	107
Various other offences	3,090	2,498	159	3,242	2,634	174
Totals, Criminal Code	**50,464**	**39,612**	**5,630**	**50,105**	**39,119**	**5,621**
Federal Statutes						
Narcotic Control Act	567	297	96	1,234	730	190
Other statutes	49	32	3	49	38	5
Totals, Federal Statutes	**616**	**329**	**99**	**1,283**	**768**	**195**
Grand Totals	**51,080**	**39,941**	**5,729**	**51,388**	**39,887**	**5,816**

[1] Includes abortion, indecent assault on female, sexual intercourse and attempt, incest, procuring, rape, attempted rape and seduction. [2] Includes causing death in the operation of a motor vehicle or otherwise.

3.—Persons Convicted of Indictable Offences classified by Occupation, Marital Status, Sex, Birthplace, etc., 1966 and 1967

Item	1966	1967	Item	1966	1967
	No.	No.		No.	No.
Total Persons Convicted	**45,670**	**45,703**	SEX		
			Male	39,941	39,887
TYPE OF OCCUPATION			Female	5,729	5,816
Agriculture	1,189	1,054	EDUCATIONAL STATUS		
Armed Services	261	261	Unable to read or write	287	235
Clerical	1,348	1,517	Elementary	16,196	14,422
Commercial and managerial	2,130	1,734	High school	18,879	18,821
Construction	4,296	4,785	Superior	716	982
Finance	53	51	Grade not stated	1,335	1,105
Fishing, trapping and logging	1,479	1,370	Not given	8,257	10,138
Labourer	8,617	7,603			
Manufacturing and mechanical	4,330	4,008	AGE		
Mining	719	711	16 to 19 years	14,722	14,683
Service—			20 to 24 years	9,675	9,734
Domestic	971	847	25 to 44 years	13,819	13,154
Personal	1,506	1,667	45 years or over	3,863	3,738
Professional	505	507	Not given	3,591	4,394
Public and protective	85	83			
Other	221	234	BIRTHPLACE		
Student	4,337	4,676	Canada	37,957	36,291
Transportation and communications	2,924	2,413	British Isles and other Commonwealth	833	833
Unemployed and retired (incl. housewives)	5,665	5,531	United States	376	467
Not given	5,034	6,651	Europe	1,921	2,000
			Asia	135	119
MARITAL STATUS			Other foreign countries	57	50
			Not given	4,391	5,934
Single	27,190	26,602	RESIDENCE		
Married	11,496	10,985			
Widowed	434	401	Urban centres	35,667	34,942
Divorced	454	452	Rural districts	7,125	7,063
Separated	1,783	1,713	Indeterminate	1,007	1,093
Not given	4,313	5,550	Not given	1,871	2,605

Female Offenders.—There were 5,816 female offenders convicted of indictable offences in 1967 compared with 5,729 in 1966. Of these offenders, Ontario accounted for 2,368, Quebec for 1,055 and British Columbia for 1,052. The ratio of female offenders convicted to total persons convicted moved upward from 12.5 p.c. in 1966 to 12.7 p.c. in 1967 ranging from 2.5 p.c. in Prince Edward Island to 14.8 p.c. in Ontario.

4.—Females Convicted of Indictable Offences, by Province, 1966 and 1967

Province or Territory	Females Convicted		Females Convicted to Total Persons Convicted	
	1966	1967	1966	1967
	No.	No.	p.c.	p.c.
Newfoundland	92	35	11.7	6.1
Prince Edward Island	4	3	3.7	2.5
Nova Scotia	136	124	9.0	8.4
New Brunswick	97	102	7.5	7.8
Quebec	1,443	1,055	14.3	11.1
Ontario	2,180	2,368	13.8	14.8
Manitoba	278	335	11.2	12.9
Saskatchewan	179	202	8.7	9.4
Alberta	487	524	10.8	14.1
British Columbia	817	1,052	12.1	14.1
Yukon and Northwest Territories	16	16	4.8	7.1
Canada	**5,729**	**5,816**	**12.5**	**12.7**

Multiple Convictions.—Table **5** shows the number of persons having more than one conviction at a court appearance for the years 1963 to 1967. Multiple convictions occur most often in cases of forgery and uttering, false pretences, theft, having in possession, and breaking and entering.

5.—Persons Convicted of More than One Offence at the Time of Trial compared with Persons Convicted of One Offence, 1963-67

Item	1963	1964	1965	1966	1967
	No.	No.	No.	No.	No.
Persons Convicted of—					
2 offences	6,244	6,085	5,754	6,032	6,023
3 offences	2,155	2,094	2,063	2,071	2,138
4 offences	1,164	1,052	1,045	1,016	1,000
5 offences	615	587	564	651	597
6 offences	407	412	399	425	347
7 offences	276	258	270	291	227
8 offences	217	209	213	208	182
9 offences	170	151	156	135	141
10 offences	123	121	138	116	118
11 to 20 offences	491	476	440	467	396
21 offences or over	169	151	158	153	110
Totals, Convicted of More than One Offence	12,031	11,596	11,200	11,565	11,279
Totals, Convicted of One Offence	30,883	30,501	30,632	34,105	34,424
Grand Totals	**42,914**	**42,097**	**41,832**	**45,670**	**45,703**

Disposition of Cases and Previous Convictions.—As shown in Table **1**, p. 512, of all suspects before the courts for indictable offences in 1967, 88.9 p.c. were adjudged guilty. There was, however, considerable variation among the provinces in this respect, the proportion ranging from 85.8 p.c. in British Columbia to 98.1 p.c. in Newfoundland.

Table **6** shows that of the 45,703 persons convicted in 1967, 25.7 p.c. had no previous conviction, 13.2 p.c. had previously been found guilty of one offence and 30.0 p.c. had two or more earlier convictions; court records for the other 31.1 p.c. were not obtained. There is little change in these percentages from year to year.

6.—Persons Charged with Indictable Offences, Disposition of Cases and Previous Convictions, 1966 and 1967

Item	1966	1967	Item	1966	1967
	No.	No.		No.	No.
Charged	51,080	51,388	Males convicted	39,941	39,887
Acquitted	4,237	4,939	Females convicted	5,729	5,816
Disagreement of jury	11	7	First conviction	11,734	12,112
Stay of proceedings	473	638	Second conviction	6,030	5,563
No Bill	21	49	Reiterated convictions	13,701	12,695
Detained because of insanity	52	52	Not given	14,205	15,333

Sentences, Method of Trial and Court Proceedings.—Table **7** summarizes the first court sentences given for indictable offences, Table **8** shows the method of trial and disposition of cases, and Table **9** shows persons charged and convicted of indictable crimes according to trial court.

Two kinds of sentences maintain for a certain period of time a relationship between the person dealt with by the court and the legal institutions of a community—probation

and commitment to an institution. There are several types of institutions to which a person can be committed, such as penitentiaries, reformatories, gaols and industrial farms. Theoretically, every institution has a specific purpose which is supposed to be taken into account when arriving at a legal decision. In practice, however, the availability of an institution in a given community is a factor in determining the decision rendered by the court.

7.—First Court Sentences Given for Indictable Offences, by Province, 1966 and 1967

Sentence	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1966												
Option of fine	229	32	452	341	2,899	4,571	541	559	1,543	1,558	53	12,778
Gaol—												
Under one year	166	24	395	407	2,659	3,016	570	602	1,265	2,089	191	11,384
One year or over	47	4	19	50	274	385	135	158	468	598	28	2,160
Reformatory and Training School	4	1	11	4	158	1,851	34	—	—	99	1	2,163
Penitentiary—												
Under two years	—	—	—	12	2	186	7	3	2	10	—	222
Two years and under five	29	11	159	97	522	626	128	76	231	335	5	2,219
Five years and under ten	1	—	10	14	110	113	11	3	31	28	2	323
Ten years and under fourteen	1	—	—	1	24	20	—	2	4	5	1	58
Fourteen years or over	—	—	—	—	15	10	—	—	1	4	—	30
Life	—	—	2	—	17	11	—	1	1	4	1	37
Preventive	—	—	—	—	2	2	—	—	—	10	—	14
Death	—	—	—	—	5	1	—	—	—	3	—	9
Suspended sentence without probation	100	29	171	141	1,753	1,055	554	410	568	914	34	5,729
Suspended sentence with probation	207	6	298	226	1,662	3,898	502	238	394	1,093	14	8,538
Totals	**784**	**107**	**1,517**	**1,293**	**10,102**	**15,745**	**2,482**	**2,052**	**4,508**	**6,750**	**330**	**45,670**
1967												
Option of fine	158	49	448	297	2,695	4,692	589	536	1,581	1,547	44	12,636
Gaol—												
Under one year	142	35	388	420	2,328	3,280	611	730	1,326	2,124	92	11,476
One year or over	20	1	16	41	257	336	140	125	539	611	6	2,092
Reformatory and Training School	—	—	1	5	102	1,847	56	—	1	113	—	2,125
Penitentiary—												
Under two years	21	—	1	11	2	137	16	8	18	16	—	230
Two years and under five	30	16	171	109	469	592	140	111	273	396	6	2,313
Five years and under ten	—	—	11	7	59	96	9	12	42	69	—	305
Ten years and under fourteen	—	—	—	1	14	12	3	1	4	14	—	49
Fourteen years or over	—	—	—	1	13	12	—	—	—	5	—	31
Life	1	—	—	—	7	12	6	2	6	6	—	40
Preventive	—	—	—	—	1	1	1	—	2	8	—	13
Death	—	—	—	—	4	1	—	—	—	2	—	7
Suspended sentence without probation	80	8	161	170	1,555	1,096	582	363	592	1,185	17	5,809
Suspended sentence with probation	79	11	319	272	1,619	3,911	536	268	351	1,171	40	8,577
Totals	**531**	**120**	**1,516**	**1,334**	**9,125**	**16,025**	**2,689**	**2,156**	**4,735**	**7,267**	**205**	**45,703**

—Method of Trial of Persons Charged with Indictable Offences, showing Disposition of Cases, by Sex and by Province, 1967

Method of Trial and Sex	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
By Judge and Jury—												
Convicted.....M.	4	1	22	4	90	324	39	39	15	174	9	721
F.	—	—	2	1	3	22	—	2	2	2	1	35
Acquitted.....M.	—	1	9	2	21	133	17	11	3	62	3	262
F.	1	—	—	1	1	17	1	1	1	4	—	27
Detained because of insanity.....M.	—	—	—	—	1	3	—	2	1	5	—	12
F.	—	—	—	—	—	1	1	1	—	—	—	3
Disagreement of jury...M.	—	—	—	1	—	5	—	—	1	—	—	7
F.	—	—	—	—	—	—	—	—	—	—	—	—
Stay of proceedings.....M.	—	—	—	1	—	2	1	2	1	23	—	30
F.	—	—	—	—	—	1	—	—	—	2	—	3
No Bill.....M.	—	—	1	—	—	46	—	—	—	—	—	47
F.	—	—	—	—	—	1	—	—	—	—	—	1
By a Judge without Jury—												
Convicted.....M.	1	11	44	5	1,580	512	55	94	301	174	—	2,777
F.	—	—	1	—	225	32	3	5	22	13	—	301
Acquitted.....M.	2	3	9	1	389	142	28	30	106	60	—	770
F.	—	—	1	—	23	21	2	3	10	6	—	66
Detained because of insanity.....M.	—	—	—	—	2	—	—	—	—	—	—	2
F.	—	—	—	—	—	—	—	—	—	—	—	—
Stay of proceedings.....M.	—	—	—	—	—	—	2	6	24	12	—	44
F.	—	—	—	—	—	—	—	1	3	3	—	7
By a Magistrate with Consent—												
Convicted.....M.	345	51	691	690	2,714	7,628	1,008	961	1,928	2,861	89	18,966
F.	14	1	42	33	147	592	67	43	118	286	8	1,351
Acquitted.....M.	2	2	68	18	280	917	27	35	95	276	6	1,726
F.	—	—	4	—	19	91	3	3	7	35	1	163
Detained because of insanity.....M.	3	—	2	2	2	5	—	2	2	—	—	18
F.	—	—	—	—	—	—	—	—	—	—	—	—
Stay of proceedings.....M.	—	—	—	—	—	—	67	—	5	190	1	263
F.	—	—	—	—	—	—	5	—	—	48	1	54
By a Magistrate, Absolute Jurisdiction—												
Convicted.....M.	146	54	635	533	3,686	5,193	1,252	860	1,967	3,006	91	17,423
F.	21	2	79	68	680	1,722	265	152	382	751	7	4,129
Acquitted.....M.	—	3	83	22	186	857	11	84	121	241	5	1,613
F.	—	—	4	3	25	171	5	8	15	80	2	313
Detained because of insanity.....M.	2	—	—	—	6	3	—	—	2	2	—	15
F.	—	—	—	—	1	—	—	—	—	1	—	2
Stay of proceedings.....M.	—	—	—	—	1	—	61	1	1	112	—	176
F.	—	—	—	—	—	—	15	—	1	45	—	61
Totals, Persons Charged	**541**	**129**	**1,697**	**1,385**	**10,082**	**18,441**	**2,935**	**2,346**	**5,134**	**8,474**	**224**	**51,388**
Totals, Persons Convicted	**531**	**120**	**1,516**	**1,334**	**9,125**	**16,025**	**2,689**	**2,156**	**4,735**	**7,267**	**205**	**45,703**

9.—Persons Charged and Convicted of Indictable Offences according to Trial Court, by Province, 1966 and 1967

Province or Territory and Item	1966					1967				
	Persons Charged and Convicted by—					Persons Charged and Convicted by—				
	Police Magistrate and Municipal Court	Juvenile or Family Court	County Court	Higher Court	Total	Police Magistrate and Municipal Court	Juvenile or Family Court	County Court	Higher Court	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland—										
Charged	704	81	4	6	795	501	32	3	5	541
Convicted	694	81	4	5	784	494	32	1	4	531
Prince Edward Island—										
Charged	91	3	16	—	110	113	—	15	1	129
Convicted	89	3	15	—	107	108	—	12	—	120
Nova Scotia—										
Charged	1,593	16	40	45	1,694	1,580	28	57	32	1,697
Convicted	1,445	13	32	27	1,517	1,419	28	47	22	1,516
New Brunswick—										
Charged	1,308	7	14	10	1,339	1,368	1	7	9	1,385
Convicted	1,264	7	14	8	1,293	1,323	1	5	5	1,334
Quebec—										
Charged	7,916	2,009	1,115	145	11,185	5,713	2,034	2,223	112	10,082
Convicted	7,134	1,993	858	117	10,102	5,210	2,017	1,809	89	9,125
Ontario—										
Charged	16,836	72	913	125	17,946	17,100	79	1,108	154	18,441
Convicted	14,968	64	628	85	15,745	15,063	72	793	97	16,025
Manitoba—										
Charged	2,260	417	66	30	2,773	2,246	540	91	58	2,935
Convicted	2,002	410	49	21	2,482	2,081	511	57	40	2,689
Saskatchewan—										
Charged	2,069	4	98	47	2,218	2,144	5	149	48	2,346
Convicted	1,947	3	70	32	2,052	2,012	4	107	33	2,156
Alberta—										
Charged	4,468	22	60	340	4,890	4,595	49	75	415	5,134
Convicted	4,200	22	45	241	4,508	4,346	49	53	287	4,735
British Columbia—										
Charged	6,489	859	252	159	7,759	6,879	1,055	371	169	8,474
Convicted	5,626	848	170	106	6,750	5,895	1,009	252	111	7,267
Yukon and Northwest Territories—										
Charged	327	1	23	20	371	211	—	—	13	224
Convicted	303	1	15	11	330	195	—	—	10	205
Canada—										
Charged	**44,061**	**3,491**	**2,601**	**927**	**51,080**	**42,450**	**3,823**	**4,099**	**1,016**	**51,388**
Convicted	**39,672**	**3,445**	**1,900**	**653**	**45,670**	**38,146**	**3,723**	**3,136**	**698**	**45,703**

Subsection 2.—Young Adult Offenders (16-24 Years) Convicted of Indictable Offences

Attention has been focused in recent years on the needs of the young adult offende of from 16-24 years of age who constitute a promising field for modern reception ar diagnostic facilities equipped with educational, trade training and other formative di ciplines. The young men and women in this age group account for 22.9 p.c. of the tot

population 16 years of age or over, but they form over half of the criminal population committing indictable offences. The group includes some of the most daring offenders who already may be experienced criminals as well as first offenders likely to be turned from crime by further education and training. There were 24,417 young adult offenders in 1967, little changed from the previous year.

10.—Young Adult Offenders, by Age Group, Sex and Province, 1966 and 1967

Year, Age Group and Sex	Nfld.	P.E.I	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1966												
16 - 17 years.....M.	188	32	319	229	1,805	2,272	430	337	592	1,021	25	7,250
F.	18	—	22	10	186	206	28	23	48	100	1	642
18 - 19 " .....M.	99	15	276	246	1,097	2,274	367	341	651	821	37	6,224
F.	8	1	15	11	118	249	55	25	53	70	1	606
20 - 24 " .....M.	161	16	332	274	1,986	2,901	402	395	896	1,252	54	8,669
F.	18	—	27	9	289	340	39	34	96	150	4	1,006
Totals, 1966.....	**492**	**64**	**991**	**779**	**5,481**	**8,242**	**1,321**	**1,155**	**2,336**	**3,414**	**122**	**24,397**
1967												
16 - 17 years.....M.	98	17	283	243	1,845	2,298	476	319	622	1,100	24	7,325
F.	3	—	16	16	158	218	58	24	52	121	1	667
18 - 19 " .....M.	90	24	271	224	991	2,278	372	320	700	870	12	6,152
F.	6	—	18	16	69	227	48	17	60	77	1	539
20 - 24 " .....M.	126	32	355	300	1,614	2,867	518	459	996	1,425	48	8,740
F.	7	—	23	18	154	381	60	30	109	205	7	994
Totals, 1967.....	**330**	**73**	**966**	**817**	**4,831**	**8,269**	**1,532**	**1,169**	**2,539**	**3,798**	**93**	**24,417**

11.—Young Adult Offenders Convicted of Indictable Offences, by Class of Offence and Sex, 1966 and 1967

Class of Offence	1966		1967	
	Males	Females	Males	Females
	No.	No.	No.	No.
Criminal Code				
Class I.—Offences against the Person.....	**2,794**	**108**	**2,652**	**91**
Abduction and kidnapping.....	23	1	27	—
Assault, causing bodily harm, common, on police and obstruction.....	2,147	77	1,965	71
Offences against females[1].....	305	8	306	4
Causing death by criminal negligence,[2] manslaughter and murder.....	44	2	58	4
Attempted murder, causing bodily harm and danger.....	61	5	74	6
Criminal negligence in operation of motor vehicle.....	18	—	11	—
Duties tending to preservation of life.....	1	—	—	—
Other offences against the person.....	195	15	211	6
Class II.—Offences against Property with Violence.....	**5,724**	**106**	**5,811**	**119**
Breaking and entering a place, extortion and robbery.....	5,724	106	5,811	119
Class III.—Offences against Property without Violence....	**10,925**	**1,746**	**10,626**	**1,632**
Fraud and false pretences.....	666	160	676	147
Having in possession.....	1,304	61	1,440	72
Theft.....	8,955	1,525	8,510	1,413

[1] Includes abortion, indecent assault on female, sexual intercourse and attempt, incest, procuring, rape, attempted rape and seduction. [2] Includes causing death in the operation of a motor vehicle or otherwise.

11.—Young Adult Offenders Convicted of Indictable Offences, by Class of Offence and Sex, 1966 and 1967—concluded

Class of Offence	1966		1967	
	Males	Females	Males	Females
	No.	No.	No.	No.
Criminal Code—concluded				
Class IV.—Malicious Offences against Property	**756**	**25**	**735**	**24**
Arson and other fires	66	3	58	6
Other interference with property	690	22	677	18
Class V.—Forgery and Other Offences Relating to Currency	**375**	**79**	**467**	**88**
Forgery and uttering forged documents	353	75	431	84
Offences relating to currency	22	4	36	4
Class VI.—Other Offences	**1,459**	**150**	**1,475**	**136**
Driving while ability to drive is impaired	41	1	26	—
Driving while intoxicated	1	—	2	—
Gaming, betting and lotteries	39	6	17	4
Keeping bawdy houses	11	71	4	40
Various other offences	1,367	72	1,426	92
Totals, Criminal Code	**22,033**	**2,214**	**21,766**	**2,090**
Federal Statutes				
Narcotic Control Act	106	39	445	108
Other statutes	4	1	6	2
Totals, Federal Statutes	**110**	**40**	**451**	**110**
Grand Totals	**22,143**	**2,254**	**22,217**	**2,200**

12.—Disposition of Sentences for Indictable Offences, by Sex, 1966 and 1967

Disposition of Sentences	1966				1967			
	16-24 Years		25 Years or Over		16-24 Years		25 Years or Over	
	M.	F.	M.	F.	M.	F.	M.	F.
	No.	No.	No.	No.	No.	No.	No.	No.
Suspended sentence	2,600	392	1,960	777	2,680	410	2,029	690
Probation	6,157	655	1,380	346	6,182	728	1,308	359
Fine	4,578	754	5,637	1,809	4,448	660	5,472	2,056
Gaol	6,113	364	6,629	54	6,287	299	6,575	407
Reformatory and training school	1,497	79	532	55	1,454	82	543	46
Penitentiary	1,198	10	1,651	44	1,164	21	1,738	58
Death	—	—	9	—	2	—	5	—

Subsection 3.—Convictions for Summary Conviction Offences

Offences punishable on summary conviction are triable by magistrates and justices of the peace under Part XXIV of the Criminal Code (SC 1953-54, c. 51) or under the provincial summary conviction Acts as the case may be. Data relating to these offences are based on convictions; no information is available on either the number of persons involved in these offences or the number of charges. In these cases, following arrest or summons to appear in court, the accused person must be tried by a magistrate or justice of the peace without the intervention of a jury. Such cases are heard in police court with a minimum of delay.

13.—Convictions for Summary Conviction Offences, by Type, 1967 and 1968

Type of Offence	1967	1968[1]	Type of Offence	1967	1968[1]
	No.	No.		No.	No.
riminal Code	**113,578**	**89,014**	**Federal Statutes**—concluded		
Attempts, conspiracies, accessories, counselling	240	258	Fisheries	985	1,078
Attempt to commit suicide	440	269	Food and Drugs	109	161
Bawdy house	363	153	Harbour Board and Merchant Seamen's	40	125
Causing disturbance by being drunk	5,514	3,035	Immigration	291	224
Common assault	10,042	7,978	Income Tax	6,777	7,063
Communicating venereal disease	16	5	Indian—		
Contempt of court	25	23	Intoxication	3,697	2,023
Corrupting morals	557	346	Other	1,130	797
Cruelty to animals	87	83	Juvenile Delinquents—		
Damage not exceeding $50 and other interference with property	4,685	3,497	Adults who contribute to delinquency	1,963	922
Disorderly conduct	17,836	13,148	Incorrigibility	1,505	1,421
Duty of persons to provide necessaries	2,167	348	Inducing child to leave home, etc.	40	23
Duty to safeguard dangerous places	15	8	Sexual immorality	1,172	117
Fraudulently obtaining food or lodging	1,044	1,086	Lord's Day	83	65
Fraudulently obtaining transportation	179	151	National Defence	97	421
Gaming, betting, lotteries	1,678	597	Railway	1,037	965
Intimidation	632	180	Unemployment Insurance	4,402	2,825
Killing or injuring bird or animal other than cattle	51	30	Weights and Measures	92	47
Motor Vehicle—			Other federal statutes	5,368	6,383
Criminal negligence in operation	398	432	**Provincial Statutes**	**1,382,451**	**1,529,313**
Dangerous driving	3,127	2,692	Children of Unmarried Parents	742	1,170
Dangerous operation of vessel, etc.	288	161	Deserted Wives and Children's Maintenance	7,925	7,686
Driving while impaired	30,731	27,531	Game and Fisheries	7,262	5,822
Driving while disqualified	7,928	6,643	Highway Traffic—		
Driving while intoxicated	1,438	1,250	Driving without care	69,144	72,149
Failing to stop at scene of accident	6,198	4,009	Other traffic	1,002,265	1,217,437
Motor vehicle equipped with smoke screen	38	22	Liquor Control—		
Taking motor vehicle without consent	1,812	1,590	Intoxication	124,265	92,473
Offensive weapons	1,371	1,166	Other	142,293	110,270
Personating peace officer	131	42	Master and Servant	658	584
Recognizance, breach of	1,788	1,868	Medical, Dentistry and Pharmacy	108	45
Vagrancy	6,767	4,929	Mental Diseases	245	244
Other Criminal Code	5,992	5,484	Prairie and Forest Fire Prevention	122	145
ederal Statutes	**29,949**	**25,741**	Protection of Children	4,321	3,093
Customs	105	161	Public Health	765	298
Excise	1,056	920	School Laws	271	220
			Other provincial statutes	22,065	17,677
			Municipal By-laws	**376,116**	**157,875**
			Intoxication	23,462	4,677
			Traffic	294,829	115,213
			Other	57,825	37,985
			Totals, Convictions	**1,902,094**	**1,801,943**

[1] Excludes Quebec.

Subsection 4.—Appeals

Appeal is an important safeguard in Canada's legal system and the conviction of a idge and jury or a judge may be appealed on the grounds that the verdict was unreasonble, that there was a wrong decision on some question of law or that there was a miscarriage f justice. In 1968 there were 4,118 appeals in indictable cases disposed of by the courts, of hich 280 were Crown appeals and 3,838 appeals of the accused. Of the Crown appeals 9 were from acquittal and 211 from sentence; of the appeals of the accused, 1,179 were from onviction and 2,659 from sentence. Appeals in summary conviction cases disposed of by he courts numbered 1,701 in 1968. Of these, 208 were appeals of the informant and 1,493 ppeals of the accused. The informant appeals comprised 164 from acquittal and 44 om sentence, and appeals of the accused comprised 1,241 from conviction and 252 from entence.

Section 3.—Juvenile Delinquents

Juvenile Delinquent, as defined in the Juvenile Delinquents Act, means any child who violates any provision of the Criminal Code or of any federal or provincial statute, or of any by-law or ordinance of any municipality, or who is guilty of sexual immorality or any similar form of vice, or who is liable by reason of any other act to be committed to an industrial school or juvenile reformatory under the provision of any federal or provincial statute. The commission by a child of any of these acts constitutes an offence known as a delinquency. The upper age limit of children brought before the juvenile courts in the provinces varies. The Act defines a child as meaning any boy or girl apparently or actually under the age of 16 years, or such other age as may be directed in any province. In Prince Edward Island, Nova Scotia, New Brunswick, Ontario and Saskatchewan under 16 is the official age; in Alberta under 16 for boys and under 18 for girls; in Newfoundland under 17; in Quebec, Manitoba and British Columbia under 18 years. Up to 1967, it was the practice of the Dominion Bureau of Statistics to publish information about juvenile delinquents 16 years of age or over separate from that of juveniles under 16 years of age. From 1967 on, the figures include all those considered as juveniles by the respective provinces, regardless of the differing upper age limits.

Included in the statistics of juvenile delinquents are cases (alleged as well as adjudged) which were brought before the courts and dealt with formally. A case was counted separately each time a child appeared before the court for a new delinquency or delinquencies. In instances where multiple delinquencies were dealt with at one court appearance, only one delinquency—the most serious—was selected for tabulation. Delinquencies reported as informal cases by the courts were not included nor were cases of children presenting conduct problems which were not brought to court or which were dealt with by the police, social agencies, schools or youth-serving agencies. Thus, community facilities for dealing with children's problems may have an influence on the number of cases referred to court and, therefore, an effect on the statistics of juvenile delinquents.

14.—Juveniles brought before the Courts, by Province, and Total Dismissed and Delinquent, 1964-68

Province or Territory	1964	1965	1966	1967[1]	1968[1]	Percentage Change, 1967–68
	No.	No.	No.	No.	No.	
Newfoundland	556	638	701	540	748	+38.5
Prince Edward Island	32	50	43	27	18	−33.3
Nova Scotia	883	950	1,059	892	963	+ 7.1
New Brunswick	573	464	466	514	721	+40.3
Quebec	2,998	3,253	4,192	6,617	6,690	+ 1.1
Ontario	10,422	10,064	10,376	11,234	12,154	+ 8.2
Manitoba	976	1,070	1,329	2,244	4,001	+78.3
Saskatchewan	332	295	234	195	257	+31.8
Alberta	1,718	1,557	2,032	2,150	2,611	+21.4
British Columbia	2,940	2,634	2,946	4,537	4,932	+ 8.7
Yukon Territory	—	—	2	—	—	—
Northwest Territories	30	—	19	8	3	−62.5
Canada	**21,460**	**20,975**	**23,399**	**28,958**	**33,098**	**+14.3**
Dismissed	612	527	528	634	982	+54.9
Adjourned *sine die*	1,483	2,096	2,561	3,246	4,974	+53.2
Delinquent	19,365	18,352	20,310	25,078	27,142	+ 8.2

[1] Includes all those considered as juveniles by the respective provinces regardless of the official upper age limit (see text above); figures for previous years include juveniles 7-15 years of age.

15.—Juvenile Delinquents, by Province, 1959-68

ear	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
).....	262	42	623	355	2,410[1]	4,199	629	182	911	2,038	35	11,686[1]
).....	409	35	682	460	2,692	5,364	1,019	231	1,031	2,042	—	13,965
.....	400	52	551	487	2,801	6,819	723	260	1,230	1,890	2	15,215
.....	484	56	823	435	2,849	7,647	778	216	1,198	2,072	50	16,608
.....	511	65	749	452	2,643	8,451	749	237	1,270	2,429	—	17,556
.....	544	30	693	529	2,779	9,271	793	249	1,635	2,813	29	19,365
.....	629	50	708	399	2,887	8,670	856	248	1,443	2,462	—	18,352
.....	693	43	740	408	3,696	8,865	1,060	212	1,768	2,805	20	20,310
[2]....	534	23	692	456	6,251	8,831	1,880	182	1,860	4,361	8	25,078
[2]....	680	10	683	604	6,067	8,711	3,242	242	2,300	4,600	3	27,142

[1] Includes 35 cases "Adjourned *sine die*", considered for statistical purposes as juvenile delinquents. [2] Includes all those considered as juveniles by the respective provinces, regardless of the official upper age limit (see text p. 522); figures for previous years include juveniles 7-15 years of age.

16.—Total Delinquent Children, by Number of Delinquent Appearances, 1967 and 1968, with Number of Appearances in Previous Years

umber Delinquent ppearances	Total Delinquent Children	Delinquent Appearances in Previous Years												
		0	1 or More	1	2	3	4	5	6	7	8	9	10	11+
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1967														
more..	22,101	14,579	7,522	5,712	726	392	225	157	94	65	34	33	29	55
.....	19,638	13,428	6,210	4,905	547	287	152	116	61	50	19	23	16	34
.....	2,017	971	1,046	674	139	77	51	28	25	11	10	7	7	17
.....	343	143	200	98	35	21	16	11	4	2	3	3	4	3
.....	79	25	54	27	5	7	5	2	3	2	2	—	—	1
.....	17	9	8	5	—	—	1	—	1	—	—	—	1	—
.....	6	3	3	2	—	—	—	—	—	—	—	—	1	—
.....	1	—	1	1	—	—	—	—	—	—	—	—	—	—
1968														
more..	23,482	18,715	4,767	2,368	945	523	341	192	123	72	61	39	31	72
.....	20,519	16,935	3,584	1,878	689	378	244	116	84	53	42	27	20	53
.....	2,427	1,524	903	396	191	100	69	56	33	15	11	9	7	16
.....	422	208	214	76	57	30	19	14	4	2	4	2	4	2
.....	85	36	49	14	6	9	8	4	1	2	4	1	—	—
.....	20	10	10	3	1	4	—	—	1	—	—	—	—	1
.....	9	2	7	1	1	2	1	2	—	—	—	—	—	—
.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—

17.—Juvenile Delinquents, by Group of Offence, and Ratio per 100,000 Population,[1] 1959-68

Year	Delinquencies against the Person		Delinquencies against Property with Violence		Delinquencies against Property without Violence		Wilful and Forbidden Acts in respect of Certain Property		Forgery and Delinquencies relating to Currency		Other Delinquencies		Total Convictions	
	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population
1959...	265	9	2,408	78	4,748	153	952	31	27	--	3,286	106	11,686	377
1960...	369	11	2,953	92	5,694	177	1,272	40	36	1	3,641	113	13,965	434
1961...	382	11	3,511	103	6,435	189	1,248	37	33	1	3,606	106	15,215	447
1962...	460	13	3,563	102	7,129	204	1,420	41	49	1	3,987	114	16,608	475
1963...	490	14	3,864	108	7,386	206	1,630	45	48	1	4,138	115	17,556	489
1964...	525	14	4,361	119	8,058[r]	229	1,654	45	51	1	4,716[r]	120	19,365	528
1965...	539	14	4,130	111	7,722	207	1,490	40	93	2	4,378	117	18,352	492
1966...	559	14	4,403	115	8,561[r]	223	1,691	44	77	2	5,019[r]	131	20,310	529
1967...	747	17	5,998	139	10,489	242	1,894	44	149	3	5,801	134	25,078	579
1968...	849	19	6,754	153	10,509	238	1,784	41	108	3	7,138	162	27,142	616

[1] For 1959-66, ratio of population 7-15 years of age; for 1967-68, ratio of population 7-17 years of age, depending o the province.

18.—Juvenile Delinquents classified by Type of Delinquency, 1964-68

Delinquency	1964	1965	1966	1967[1]	1968[1]
	No.	No.	No.	No.	No.
Manslaughter and murder and causing death by criminal negligence	1	4	3	5	5
Murder, attempt	2	1	1	1	2
Rape and attempt, sexual intercourse and incest	4	12	10	10	15
Indecent assault (male and female)	134	114	101	107	139
Assault, causing bodily harm and danger	60	58	58	170	126
Common assault	278	307	337	375	436
Interfering with transportation facilities	5	2	—	—	—
Other offences against the person	41	41	49	79	126
Breaking and entering a place	4,246	4,037	4,322	5,815	6,553
Robbery and extortion	115	93	81	183	201
Theft and having in possession	8,004	7,669	8,493	10,373	10,410
False pretences and fraud and corruption	54	53	68	116	99
Arson	106	119	116	132	125
Other interference with property	1,548	1,371	1,575	1,762	1,605
Forgery and delinquencies relating to currency	51	93	77	149	108
Incorrigibility and vagrancy	789	844	640	759	900
Immorality	186	201	166	235	249
Various other delinquencies	3,741	3,333	4,213	4,807	6,043
Totals	**19,365**	**18,352**	**20,310**	**25,078**	**27,142**

[1] Includes all those considered as juveniles by the respective provinces, regardless of the official upper age lim (see text on p. 522); figures for previous years include juveniles 7-15 years of age.

19.—Percentages of Delinquent Boys and Girls, by Age Group, 1967 and 1968

Age Group	1967			1968		
	Boys	Girls	Both Sexes	Boys	Girls	Both Sexes
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
7-12 years	17.6	12.8	17.1	14.4	8.5	13.8
13-17 "	81.5	86.5	82.0	84.7	90.7	85.4
Not given	0.9	0.7	0.9	0.9	0.8	0.8
Totals	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

20.—Age, Sex and School Grade of Delinquent Boys and Girls, 1967 and 1968

(B=Boys; G=Girls)

Age	School Grades																Total Delinquents	
	Elementary										Secondary		Auxiliary		Not Given			
	1–4		5		6		7		8									
	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1967																		
years	30	2	—	—	—	—	—	—	—	—	—	—	—	—	8	—	38	2
"	129	9	—	—	—	—	—	—	—	—	—	—	2	—	24	—	155	9
"	278	17	17	2	—	—	—	—	—	—	—	—	5	—	33	—	333	19
"	375	23	162	12	36	2	2	—	1	—	—	—	6	—	44	1	626	38
"	275	15	363	36	248	15	47	7	5	—	1	—	15	—	79	3	1,033	76
"	177	10	331	30	581	61	420	72	55	13	6	1	27	3	142	16	1,739	206
"	92	20	213	19	511	83	941	145	693	138	137	41	47	6	219	34	2,853	486
"	76	8	131	14	376	41	915	151	1,541	244	1,149	211	79	8	398	87	4,665	764
"	64	6	96	8	237	24	595	90	1,321	184	3,342	567	95	16	694	127	6,444	1,022
"	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2,012	223	2,012	223
"	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,916	184	1,916	184
t given	3	1	1	—	2	—	3	—	1	—	5	1	1	—	198	19	214	21
Totals	**1,499**	**111**	**1,314**	**121**	**1,991**	**226**	**2,923**	**465**	**3,617**	**579**	**4,640**	**821**	**277**	**33**	**5,767**	**694**	**22,028**	**3,050**
1968																		
years	20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	20	—
"	97	4	—	—	1	—	—	—	—	—	—	—	—	—	13	—	111	4
"	243	10	28	—	1	—	—	—	—	—	1	—	5	—	23	—	301	10
"	258	12	151	7	25	4	2	2	1	—	—	—	9	—	46	3	492	28
"	212	13	306	11	240	24	41	4	5	—	—	—	17	—	62	3	883	55
"	140	5	285	27	503	46	436	43	94	20	6	1	32	2	127	22	1,623	166
"	83	4	184	25	445	79	958	140	727	139	135	34	67	4	246	43	2,845	468
"	51	8	110	11	316	48	988	133	1,644	265	1,302	269	127	28	413	79	4,951	841
"	21	—	69	9	204	26	579	72	1,594	225	3,384	521	165	20	779	115	6,795	988
"	12	4	30	1	65	10	171	21	391	26	1,482	175	45	4	335	35	2,531	276
"	9	—	31	5	68	9	180	7	311	24	1,777	160	80	7	545	50	3,001	262
t given	1	—	—	—	2	—	3	—	5	1	10	—	—	1	415	53	436	55
Totals	**1,147**	**60**	**1,194**	**96**	**1,870**	**246**	**3,358**	**422**	**4,772**	**700**	**8,097**	**1,160**	**547**	**66**	**3,004**	**403**	**23,989**	**3,153**

21.—Disposition of Delinquents, by Type of Sentence, 1959–68

Year	Reprimanded		Probation of Court		Protection of Parents		Fined or Made Restitution		Detained Indefinitely		Sent to Training School		Final Disposition Suspended		Mental Hospital	
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
9	236	2.0	6,151	52.6	412	3.5	1,810	15.5	9	0.1	1,678	14.4	1,381	11.8	9	0.1
0	442	3.2	7,413	53.1	518	3.7	2,289	16.4	42	0.3	1,791	12.8	1,456	10.4	14	0.1
1	544	3.6	7,341	48.2	644	4.2	2,148	14.1	89	0.6	1,974	13.0	2,466	16.2	9	0.1
2	697	4.2	8,827	53.1	369	2.2	2,219	13.4	89	0.5	1,862	11.2	2,533	15.3	12	0.1
3	977	5.6	8,292	47.2	462	2.6	2,460	14.0	99	0.6	2,043	11.6	3,180	18.1	43	0.3
4	1,062	5.5	9,624	49.7	612	3.2	2,247	11.6	139	0.7	1,967	10.1	3,699	19.1	15	0.1
5	773	4.2	10,021	54.6	550	3.0	2,133	11.6	80	0.4	1,925	10.5	2,845	15.5	25	0.1
6	791	3.9	10,826	53.3	1,014	5.0	2,343	11.5	96	0.1	1,971	9.7	3,258	16.0	17	0.1
7	854	3.4	15,603	62.2	1,116	4.4	2,230	8.9	93	0.4	1,978	7.9	3,185	12.7	19	0.1
8	983	3.6	13,563	50.0	1,296	4.8	3,728	13.7	298	1.1	2,167	8.0	5,081	18.7	26	0.1

Section 4.—Correctional Institutions and Training Schools

Subsection 1.—Statistics of Correctional Institutions and Training Schools

Correctional institutions may be classified under four headings: (1) Penitentiaries—erated for adult offenders by the Federal Government in which, generally speaking, ntences of over two years are served; (2) Reformatories—operated for adult offenders by

the provinces in which individual sentences of up to two years are served; (3) Comm Gaols—operated for adult offenders by the provinces or counties in which sentences of to two years can be served but in which, generally speaking, short-term sentences a served; and (4) Training Schools—operated by the provinces or private organizations und provincial charter for juvenile offenders serving indefinite terms up to the legal age f children in the particular province.

There is a limited amount of statistical information available with respect to the types of institution. "In-custody" figures shown in Table **22** for penitentiaries refer on to those persons under sentence, but the figures for admissions include those receiv from courts as well as by transfer from other penitentiaries and by cancellation of parol Figures for releases include expiry of sentences, transfers between penitentiaries, releases parole, deaths, pardons and releases on court order. In-custody figures for provincial a county institutions may include, in addition to those serving sentences, persons awaiti trial, on remand for sentence or psychiatric examination, awaiting appeal or deportatio any others not serving sentence and, for training school population, juveniles on placemer

Population figures in Tables **22** and **23** are for a given day of the year, which is Mar. except for Quebec gaols where populations are counted as of Dec. 31. These figu represent, in effect, a yearly census of correctional institutions and, as such, are not indi tive of the daily average population count. For instance, if an abnormal number of co mitments is made to a certain institution on or just prior to Mar. 31, the result will be unrepresentative population total for the institution in that year.

With regard to the fluctuations that might have occurred during the year betwe census days, the total population of correctional institutions has shown a general increa since Mar. 31, 1963; however, totals for each type of institution have recently shown tendency to level off or decline slightly.

22.—Population in Penitentiaries, Years Ended Mar. 31, 1964-68

Item	1964	1965	1966	1967	1968
	No.	No.	No.	No.	No.
In custody at beginning of year	7,219	7,655[1]	7,514	7,437	7,16
Received during year	6,439	5,852	5,991	7,128	7,20
Discharged during year	6,007	5,993	6,068	7,397	7,34
In custody at end of year	7,651	7,514	7,437	7,168	7,02

[1] Includes four females admitted to British Columbia penitentiary not counted in 1964.

23.—Populations in Reformatories and Gaols and in Training Schools, as at Mar. 31, 1964

Type of Institution	1964	1965	1966	1967	1968
	No.	No.	No.	No.	No.
Reformatories and Gaols—					
Reformatories for men	3,977	3,970	3,686	3,968	3,92
Reformatories for women	171	129	156	111	13
Common gaols	8,411	8,484	8,415	8,260	8,63
Totals, Reformatories and Gaols	**12,559**	**12,583**	**12,257**	**12,339**	**12,68**
Training Schools—					
Training schools for boys	2,662	2,706	2,545	2,478	2,55
Training schools for girls	1,416	1,332	1,215	1,127	1,10
Totals, Training Schools	**4,078**	**4,038**	**3,760**	**3,605**	**3,65**

Subsection 2.—The Canadian Penitentiary Service*

The Penitentiary Service operates under the Penitentiary Act (SC 1960-61, c. 53) and is under the jurisdiction of the Solicitor General of Canada. It is responsible for all federal penitentiary institutions and for the care and training of persons sentenced or committed thereto. The Commissioner of Penitentiaries, under the direction of the Solicitor General, has control and management of the Service and all matters connected therewith. In the year ended Mar. 31, 1970, the federal penitentiary system consisted of six maximum security, nine medium security, 11 minimum security and nine specialized institutions. The latter are: the Special Correctional Unit at Ville de Laval, Que., for the treatment of hostile inmates; an Industrial Annex also at Ville de Laval; the Prison for Women at Kingston, Ont.; the Mountain Prison at Agassiz, B.C., for aged inmates; the Community Release Centres at Montreal, Toronto, Winnipeg and Vancouver; and the Matsqui Institution in British Columbia for narcotic addicts, male and female.

Six institutions receive inmates sentenced by the courts to imprisonment for terms of from two years to life. These are located at New Westminster, B.C., Prince Albert, Sask., Stony Mountain, Man., Kingston, Ont., Ville de Laval, Que., and Dorchester, N.B. All are maximum security institutions except the one at Stony Mountain, which is of medium security. A new maximum security institution—the Archambault Institution—located at Ste. Anne des Plaines, Que., was constructed as part of a plan to abandon the St. Vincent de Paul Penitentiary. Many persons sentenced to penitentiary terms in Newfoundland are held in the provincially operated institution at St. John's, under financial arrangements authorized by Sect. 14 of the Penitentiary Act.

Medium and minimum security institutions and the camps receive inmates transferred from the maximum security institutions on the basis of their suitability for special forms of training, including vocational training. The medium security institutions are located as follows: the Springhill Institution at Springhill, N.S.; the Federal Training Centre and the Leclerc Institution at Ville de Laval, Que.; the Cowansville Institution at Cowansville, Que.; the Collins Bay Penitentiary and the Joyceville Institution within a few miles of Kingston, Ont.; the Warkworth Institution at Campbellford, Ont.; Manitoba Penitentiary at Stony Mountain, Man.; the Drumheller Institution at Drumheller, Alta.; and the Matsqui Institution at Abbotsford, B.C. One of these institutions—the Federal Training Centre—is designed for the training of young offenders; two—the Leclerc Institution and the Joyceville Institution—are designed for the training of adult offenders, and five—the Springhill Institution, the Cowansville Institution, the Collins Bay Penitentiary, and the Warkworth and Drumheller Institutions—are designed for the training of young offenders and for adults who are likely to benefit from the training program.

Five minimum security correctional camps are operated as extensions of a main institution in their respective areas. These are located at William Head and Agassiz, B.C.: Beaver Creek and Landry Crossing near Bracebridge and Petawawa, Ont.; and Blue Mountain near Gagetown, N.B. Six minimum security farm annexes operate as extensions of the penitentiaries at Dorchester, Ville de Laval, Collins Bay, Joyceville, Stony Mountain and Prince Albert, respectively. There is also a minimum security industrial satellite at Ville de Laval.

The Prison for Women at Kingston receives female inmates transferred upon committal to penitentiary from any part of Canada. Mountain Prison, the special security prison camp located near Agassiz, B.C., which was originally used for the incarceration of Doukhobor Freedomites, has been converted to an institution for older male recidivists. A Special Correctional Unit operates in the Quebec penitentiary region for the training of hostile inmates. Four Community Release Centres—at Montreal, Toronto, Winnipeg and Vancouver—serve nearby institutions.

Headquarters of the Penitentiary Service is located at Ottawa and regional directorates at New Westminster, B.C., Kingston, Ont., and Ville de Laval, Que., for the Western,

* Prepared under the direction of A. J. MacLeod, (then) Commissioner of Penitentiaries, Ottawa.

Ontario and Quebec areas, respectively. Three Correctional Staff Colleges—at Kingston Ville de Laval and New Westminster—are operated for the training of recruits and for the advanced training of penitentiary officers. These Staff Colleges provide excellent facilities for Service-wide conferences of institutional heads and other special groups of officers.

As at Mar. 31, 1970, about 54 p.c. of the inmates were in medium and minimum security institutions or specialized institutions. New institutions have been carefully designed to provide facilities for the rehabilitation of their inmates. All afford space for both indoor and outdoor recreation. Some of the old institutions are being brought up to date to meet present-day needs and others are being phased out.

Every inmate, on arriving at a penitentiary, is examined and classified. Young o first offenders are segregated from the recidivists. Doctors, psychologists and social workers examine them from the viewpoints of physical and mental health, abilities, training and need for schooling, so as to launch them on a program of rehabilitation. The Service policy on the training of inmates is about half way between a permissive attitude and one of stringent discipline. It is one of understanding as applied to each individual within a framework of discipline. The program of the Correctional Services is directed primarily toward assisting the inmate in every way to regain his proper place in society. The facilities to achieve this are available and the staff involved in the process is dedicated. Academic opportunities are provided with inmates attending classes on either a full-time or a part-time basis. Other students advance their education by correspondence study offered at the elementary, secondary or university level. In 1969-70, more than 2,600 inmates were advancing their education, often with a view to acquiring a trade or profession. Selected inmates attend community educational institutions.

Pre-employment, vocational and industrial training is available in all regions of Canada. Full-time vocational courses, similar to those given in technical schools, developed around skilled and semi-skilled unprofessional occupations are provided in 32 diverse occupations and skills, and more than 2,000 inmates participate each year. This type of training follows a standardized syllabus and courses vary in duration from six to eight weeks for pre-employment training to 12 months for occupations demanding a higher degree of skill and knowledge. It is possible for graduates of these courses to obtain provincial certification as qualified tradesmen or partial credits toward completion of apprenticeship, depending on academic standing, length of training and general suitability. The Service operates 99 industrial shops in 24 trades such as wood, metal, electricity, plumbing, masonry, textile, printing and electronics. Training courses are also available in computer programming and data processing. Industrial training is co-ordinated with the Department of Manpower and Immigration, so that the inmate may be trained in a trade in which he will be likely to find continuing employment after release.

A sound and healthy program of evening and weekend activities has been developed consisting of recreational activities and of courses in the arts—poetry, painting, sculpture, music, singing, drama and public speaking. Many of these activities are conducted by interested members of the community on a voluntary basis.

The inmate who is in need receives professional services or counselling by staff specialists. 20 physicians, 14 dentists, 23 psychiatrists, 23 psychologists and 107 classification officers and social workers, employed on a full-time or a part-time basis, serve an inmate population of about 7,400.

Inmate training programs are currently under assessment with a view to their improvement and extension. Research projects are being conducted at l'Université de Montréal on post-release success rates; at McGill University on late-comers to crime; at Queen's University on sensory deprivation; and at the University of British Columbia on dangerous sexual offenders. Pilot projects on narcotic addiction are in operation at the Matsqui Institution in both male and female units. A pilot therapeutic community is being developed at the Springhill Institution in Nova Scotia. University students writing theses on social problems related to criminality are assisted in their research work.

Subsection 3.—The National Parole System

Parole is a means by which an inmate in any correctional institution in Canada, if he ives definite indication of his intention to reform, can be released from prison. The urpose of parole is the protection of society through the rehabilitation of the inmate. t is essential for the public to understand that the true purpose of punishment should be he reformation of the offender and not just vengeance or retribution but, since the Parole oard is as much concerned with the protection of society as with the reformation of he inmate, it recognizes that the welfare of an individual inmate must not be allowed to mpair the success of the parole system or the public safety.

It is the function of the Parole Board to select those inmates who show some sincere ntention to reform and to assist them in doing so by granting parole. The inmate then s allowed to serve the remainder of his sentence in society, but under supervision. He is ubject to restrictions and conditions as to his conduct and behaviour, designed for his elfare and the protection of others. The Board is not a reviewing authority and is not oncerned with the propriety of the conviction or the length of the sentence but only with he problem of deciding in each case whether or not there is chance of reformation. Parole s not a matter of clemency and is not granted on compassionate or humanitarian grounds ut only if there appears to be at least a reasonable chance that the inmate will lead a law-biding life. The treatment and training program in the institution is a vital part of the orrectional process and parole is an extension of this training outside the institution. t is not a matter of pampering prisoners but of trying to give as many of them as possible chance to rehabilitate themselves.

The National Parole Board operates under the authority of the Parole Act (SC 1958, . 38), which came into force Feb. 15, 1959 replacing the Ticket-of-Leave Act, and was mended in 1967 (1966-67, c. 25) and in 1969 (1968-69, c. 38). The Board is composed of a hairman and eight other members and has jurisdiction for parole over any adult inmate f any prison in Canada who was convicted of an offence against an Act of the Parliament f Canada. It also has the jurisdiction to revoke or suspend any sentence of whipping or ny order made under the Criminal Code prohibiting any person from operating a motor ehicle.

A person is sent to a federal institution if his sentence of imprisonment is two years or nore, or to a provincial institution if his sentence is less than two years. All inmates can ecome eligible for parole but an inmate need not obtain the services of a lawyer to apply or parole. The date of the parole review, to grant or refuse parole, for an inmate in a federal enitentiary is set within six months of his entry into the institution. If the sentence is nder two years, the inmate is eligible for parole after one third of the sentence is served. f the sentence is two years or more, the inmate is eligible after one third of the sentence s served or after four years, whichever is less, although he must serve at least nine months f his sentence. Where the sentence is for ordinary life, eligibility comes after seven years. f the inmate is serving a life sentence where death has been commuted, or a life sentence s a minimum punishment, parole cannot be granted until consent is given by the Governor n Council. In such cases, the Board cannot recommend parole until 10 years of the sentence ave been served. The Board has the authority to grant an earlier release in exceptional ircumstances where the case is deserving and the best interests of the community and the nmate will be served.

Unless an inmate advises the Board in writing that he does not want parole, the Board ill review his case every two years whether he applies or not, until he is either granted arole or his sentence is served. However, once eligible for parole, the inmate may apply t any time. An inmate in a provincial institution must either apply or have someone pply on his behalf. As soon as an application is received, investigation is begun and the esults presented to the Board for decision. All applications and reports are processed by

the Parole Board staff at Ottawa but regional officers, stationed at 28 centres across th country, interview applicants for parole in their respective areas, giving them an opportunit of making verbal representations to a representative of the Board. The regional officer submit to the Board a report of each interview with an assessment of the inmate's suitabilit for parole.

The decision of the Board with respect to any one inmate is based on reports it receive from the police, from the trial judge or magistrate and from various people at the institutio who deal with him. Reports are also obtained, when available, from a psychologist psychiatrist and, if necessary, a community investigation is conducted to secure as muc information as possible about his family and background, his work record and his positio in the community. From these reports, an assessment is made to determine whether not he has changed his attitude and is likely to lead a law-abiding life.

A person on parole is under the care of a supervisor, who may be the Board's region representative, an after-care agency worker or a probation officer, who reports to the region officer. If he violates the conditions of his parole or commits a further offence or mi behaves in any manner, the Board may suspend or revoke his parole and return him to th institution to serve that part of his sentence outstanding at the time his parole was grante If a parolee commits an indictable offence, his parole is automatically forfeited and he returned to the institution to serve the unexpired balance of his sentence plus any ne term to which he is sentenced for the commission of the new offence. The regional offic may also issue a Warrant of Suspension and have a parolee placed in custody if it is necessar to prevent a breach of any term or condition of the parole. These officers are thus able t exercise effective and adequate control over all parolees in their respective areas.

During the 11 years of its operation, the Parole Board has granted parole (of all type to 28,800 inmates. During the same period 3,310 parolees have been returned to priso There were 1,564 paroles revoked for misbehaviour or the commission of a minor offenc and 1,746 paroles were forfeited for the commission of an indictable offence. The propo tion of parole successes to the number of parole releases was 89 p.c.

Section 5.—Police Forces and Crime Statistics

Organization of Police Forces.—The police forces of Canada are organized in thr groups: (1) the federal force, which is the Royal Canadian Mounted Police; (2) provinci police forces—the Provinces of Ontario and Quebec have their own provincial police forc but all other provinces engage the services of the Royal Canadian Mounted Police to pe form parallel functions within their borders; and (3) municipal police forces—most urba centres of reasonable size maintain their own police forces or engage the services of the pr vincial police, under contract, to attend to police matters. In addition, the Canadia National Railways, the Canadian Pacific Railway Company and the National Harbou Board have their own police forces.

The Royal Canadian Mounted Police.—The Royal Canadian Mounted Police is civil force maintained by the Federal Government. It was established in 1873 as th North-West Mounted Police for service in what was then the North-West Territories an in recognition of its services, was granted the use of the prefix "Royal" by King Edwa VII in 1904. Its sphere of operations was expanded in 1918 to include all of Canada we of Port Arthur and Fort William (now Thunder Bay) and in 1920 it absorbed the Dominio Police, its headquarters was transferred from Regina to Ottawa and its title was chang to Royal Canadian Mounted Police.

The Force is responsible to the Solicitor General of Canada and is headed by a Co missioner who holds the rank and status of a Deputy Minister. Officers are commission

the Crown and are selected from the non-commissioned ranks. The Force has complete sdiction in the enforcement of the federal statutes. By arrangement between the eral and provincial governments, it enforces the provincial statutes and the Criminal le in all provinces except Ontario and Quebec and under special agreement it polices ne 148 municipalities (as of Apr. 1, 1970). It is the sole police force in the Yukon and rthwest Territories, where it also performs various administrative duties on behalf of tain departments of the Federal Government. The Force maintains liaison officers in ndon and Washington and represents Canada in the International Criminal Police ganization, which has headquarters in Paris.

The 17 divisions making up the strength of the Force across Canada comprise 44 subisions which include 740 detachments. "Headquarters" Division is located at Ottawa, are divisional headquarters for "Air" and "Marine", which support the operations of land divisions. "Depot" and "N" Divisions are training centres. A teletype system s the widespread divisional headquarters with the administrative centre at Ottawa and etwork of fixed and mobile radio units operates within the provinces. The focal point the criminal identification work of the Force is the Directorate of Laboratories and ntification; its services, together with those of the divisional and subdivisional units the five Crime Detection Laboratories, are available to police forces throughout nada. The Force operates the Canadian Police College at which Force members and cted representatives of other Canadian and foreign police forces may study the latest ances in the fields of crime prevention and detection.

The uniform strength of the Force as of Mar. 31, 1970 was 9,925, including Marine nstables and Special Constables; at that time it maintained 2,894 motor vehicles, 22 airft, 60 ships, 264 inland boats, 38 police service dogs and 122 horses.

Quebec Provincial Police Force.—The Quebec Provincial Police Force is responsible for maintenance of peace, order and public safety in the province, and for the prevention l investigation of criminal offences and of violation of all laws of the province.

The province is divided into two almost equal parts known as the Montreal Division the Quebec Division. The Montreal Division has three subdivisions with headquarters Granby, Hull and Montreal; the Quebec Division has four subdivisions with headrters at Baie Comeau, Chicoutimi, Quebec and Rimouski. There are 109 detachments oughout the province—60 in the Montreal Division and 49 in the Quebec Division. e Force at the end of 1969 had 3,096 members—officers, non-commissioned officers and stables.

The Quebec Provincial Police Force is under the command of a Director General who is sted by five Deputy Directors General. Each Division is headed by a Chief Inspector each subdivision by a commissioned officer.

Ontario Provincial Police Force.—The Ontario Provincial Police, a Crown force, he third largest deployed force on the North American Continent, having a total horized strength of more than 4,750 (1970) uniformed and civilian personnel.

The Force is administered from general headquarters at Toronto by a Commissioner has the rank and status of a Deputy Minister under the Minister of Justice. Other ior executive officers include two Deputy Commissioners and five Assistant Commisners. The Force has two principal sides—Operations and Services—which are adminied under the supervision of the Deputy Commissioner Operations and the Deputy mmissioner Services, respectively. In turn, five Divisions at the next level are adistered by their respective Assistant Commissioners—Assistant Commissioner Field, istant Commissioner Traffic, Assistant Commissioner Administration, Assistant mmissioner Staff Services and Assistant Commissioner Special Services.

Specialized Branches under the Special Services Division include Auto Theft, Crimi Investigation, Anti-rackets, Intelligence, Security, Anti-gambling, Liquor Laws Enfor ment and Precious Metals Theft.

For policing and administration purposes, the province is divided geographically i 17 districts. In the field, there are 199 detachments controlled through 17 district he quarters located at Chatham, London, Burlington, Niagara Falls, Downsview, Mo Forest, Barrie, Peterborough, Belleville, Perth, Long Sault, North Bay, Sudbury, Sa Ste Marie, South Porcupine, Thunder Bay and Kenora. Fifteen municipalities are poli under special contract.

Under provisions of the Ontario Police Act, the Force is responsible for: (1) enforc federal and provincial statutes in those areas that are not required to maintain their o police department; (2) maintaining a traffic patrol on the more than 10,000 miles of Ki Highways and 65,000 miles of secondary county and township roads; (3) enforcing Liquor Licence Act and the Liquor Control Act for Ontario; (4) maintaining a Crimi Investigation Branch and other specialized branches to assist all other forces in the vestigation of major crimes; and (5) assisting other forces by providing additional m power in the event of emergencies.

Under the Staff Services Division, the Central Records and Communications Bra offers 24-hour-seven-day-week service to all police departments in Ontario on such matt as criminal records, fingerprint records, missing and wanted persons, dry cleaning laundry mark identification, and stolen and recovery property lists.

The Force operates one of the largest frequency modulation radio networks in world, with 102 fixed radio stations and more than 1,260 radio-equipped mobile u including motorcycles, marine units and aircraft. It also operates the Ontario P Forces telecommunications network connecting all 17 districts as well as other po departments on a local, national and international basis. Extensions to routine po service are provided by canine, SCUBA and marine-bush rescue units strategically loca throughout the province and available to other law-enforcement agencies upon requ

In addition to regular constable recruitment, the Force has a cadet program mak it possible for qualified young men to create for themselves a career in a long-establis police force. An important development in the progress of this Crown force occurred w legislative enactment provided that all ranking officers, from inspector up to and inclu the Commissioner, receive the Queen's Commission in the same manner as the Ar Forces.

Municipal Police Forces.—Provincial legislation makes it mandatory for cities towns to furnish adequate municipal policing for the maintenance of law and order in t communities. Also, all villages and townships or parts of townships that have a popula density and a real property assessment sufficient to warrant maintenance of a police f and have been so designated by Order in Council, are made responsible for the adeq policing of their municipalities.

Uniform Crime Reporting.—The present method of reporting police statis (police administration, crime and traffic enforcement statistics), known as the Unif Crime Reporting Program, was started on Jan. 1, 1962, and was developed by Dominion Bureau of Statistics in co-operation with the Canadian Association of C of Police Committee on Uniform Crime Reporting.

Police Personnel.—As shown in Table **24**, police personnel in Canada numbered 43 at the end of 1968, including 37,044 sworn-in policemen, 6,475 other full-time emplo serving as clerks, technicians, artisans, commissionaires, guards, special constables, and 462 cadets. The ratio of police personnel per 1,000 population was 2.1 and the

police was 1.8. Provincial ratios for police personnel ranged from 1.2 to 4.6 per 1,000 rsons and for police only from 1.1 to 4.4. In 12 selected metropolitan areas there were ,631 police personnel including 13,508 police and 2,123 cadets and other full-time em- oyees. Total municipal police personnel numbered 24,827, made up of 23,482 in municipal ces, 1,289 Royal Canadian Mounted Police and 56 provincial police under municipal ntracts.

There were five policemen killed by criminal action during 1968 and 10 policemen t their lives accidentally while on duty. Police transport facilities at the end of the ar included 7,316 automobiles, 959 motorcycles, 744 other motor vehicles, 422 boats, aircraft, 241 horses and 89 service dogs.

24.—Police Personnel, by Type of Force, 1967 and 1968

Force	1967				1968			
	Police	Cadets	Other Full-Time Employees	Total	Police	Cadets	Other Full-Time Employees	Total
	No.	No.	No.	No.	No.	No.	No.	No.
yal Canadian Mounted Police—								
ctual strength	8,563	—	2,176	10,739	8,915	—	2,327	11,242
uthorized strength	8,360	—	2,430	10,790	8,766	—	2,634	11,400
ngagements	991	—	519	1,510	675	—	411	1,086
etirements and other separations	373	—	354	727	357	—	249	606
tario Provincial Police—								
ctual strength	3,243	73	769	4,085	3,461	50	831	4,342
uthorized strength	3,341	73	802	4,216	3,512	50	868	4,430
ngagements	341	52	261	654	430	48	261	739
etirements and other separations	173	47	191	411	207	71	199	477
ebec Provincial Police—								
ctual strength	2,605	56	689	3,350	2,779	49	747	3,575
uthorized strength	2,811	75	689	3,575	2,903	75	747	3,725
ngagements	287	46	140	473	239	36	127	402
etirements and other separations	46	15	66	127	62	43	69	174
nicipal Police (excl. RCMP and OPP contracts)—								
ctual strength	20,258	368	2,474	23,100	20,630	363	2,489	23,482
uthorized strength	20,985	356	2,510	23,851	21,374	359	2,527	24,260
ngagements	2,135	272	653	3,060	1,862	298	563	2,723
etirements and other separations	1,490	271	513	2,274	1,217	287	460	1,964
nadian National Railways Police—								
ctual strength	570	—	26	596	550	—	27	577
uthorized strength	574	—	27	601	557	—	27	584
ngagements	84	—	2	86	43	—	6	49
etirements and other separations	112	—	1	113	63	—	5	68
nadian Pacific Railway Company Police—								
ctual strength	532	—	27	559	526	—	27	553
uthorized strength	548	—	27	575	551	—	27	578
ngagements	79	—	6	85	95	—	7	102
etirements and other separations	86	—	5	91	101	—	7	108
tional Harbours Board Police—								
ctual strength	110	—	2	112	183	—	27	210
uthorized strength	114	—	2	116	192	—	27	219
ngagements	8	—	1	9	45	—	9	54
etirements and other separations	9	—	1	10	12	—	—	12
tals, All Forces—								
ctual strength	**35,881**	**497**	**6,163**	**42,541**	**37,044**	**462**	**6,475**	**43,981**
uthorized strength	**36,733**	**504**	**6,487**	**43,724**	**37,855**	**484**	**6,857**	**45,196**
ngagements	**3,925**	**370**	**1,582**	**5,877**	**3,389**	**382**	**1,384**	**5,155**
etirements and other separations	**2,289**	**333**	**1,131**	**3,753**	**2,019**	**401**	**989**	**3,409**

25.—Police Personnel, by Sex and Type of Force, 1967 and 1968

(Actual strength)

Force	Police		Cadets		Other Full-Time Employees		Totals	
	M.	F.	M.	F.	M.	F.	M.	F.
	No.	No.	No.	No.	No.	No.	No.	No.
1967								
Royal Canadian Mounted Police	8,563	—	—	—	761	1,415	9,324	1,4
Ontario Provincial Police	3,243	—	73	—	360	409	3,676	4
Quebec Provincial Police	2,594	11	56	—	391	298	3,041	3
Municipal Police (excl. RCMP and OPP contracts)	20,082	176	359	9	1,510	964	21,951	1,1
Canadian National Railways Police	565	5	—	—	10	16	575	
Canadian Pacific Railway Company Police	532	—	—	—	11	16	543	
National Harbours Board Police	110	—	—	—	2	—	112	—
1968								
Royal Canadian Mounted Police	8,915	—	—	—	801	1,526	9,716	1,5
Ontario Provincial Police	3,461	—	50	—	402	429	3,913	4
Quebec Provincial Police	2,777	2	49	—	426	321	3,252	3
Municipal Police (excl. RCMP and OPP contracts)	20,444	186	351	12	1,451	1,038	22,246	1,2
Canadian National Railways Police	547	3	—	—	9	18	556	
Canadian Pacific Railway Company Police	526	—	—	—	10	17	536	
National Harbours Board Police	183	—	—	—	20	7	203	

Crime Statistics.—Table **26** shows the number of crimes dealt with by the police in 196 including offences under the Criminal Code, federal statutes, provincial statutes ar municipal by-laws; offences cleared by charge and otherwise; and the number of adults ar juveniles charged. Offences reported or known to the police but proved unfounded are n shown in the table but numbered 68,990, including 58,891 under Criminal Code classific tions, 3,775 under federal statutes, 4,941 under provincial statutes and 1,383 under municip by-laws, excepting traffic.

During 1968, the police reported 79,162 offences committed against the person, i cluding 315 murders, 10,624 rape and other sexual offences, and 67,983 offences of woundi and other assaults (not indecent); all offences against the person resulted in the chargi of 29,069 persons, 2,297 of them juveniles. During the year there were 544,822 cases robbery, theft and other offences against property, resulting in 103,864 persons charge 35,202 of them juvenile males and 3,212 juvenile females; 48,556 cases of fraud, fal pretences, forgery, etc.; 1,996 of prostitution; 2,115 gaming and betting; 5,013 offensi weapons; and 215,866 other Criminal Code offences. In addition to the 40,058 feder statute offences reported, 4,761 were under the Narcotic Control Act and 682 under tl controlled drug part of the Food and Drugs Act; these two classifications resulted in tl charging of 3,287 persons.

Provincial and territorial fire marshals and commissioners reported 2,267 suspected known incendiary offences, of which 720 were proved unfounded; 410 offences were report cleared by charge, resulting in 354 adults and 198 juveniles being charged.

The number of motor vehicles stolen was 50,566 (an estimated 641.1 per 100,000 vehicl registered); 46,920 or 92.8 p.c. of these vehicles were recovered. Police were asked locate 22,098 missing adults and 36,901 missing juveniles; 21,275 adults and 36,399 juvenil were found. The number of drownings reported by police was 1,258.

26.—Crime Statistics, by Type of Offence, 1967 and 1968

Year and Offence	Actual Offences[1]	Offences Cleared		Persons Charged			
		By Charges	Otherwise	Adults		Juveniles	
				Male	Female	Male	Female
	No.	No.	No.	No.	No.	No.	No.
1967							
Criminal Code	**786,071**	**185,085**	**98,426**	**142,358**	**15,136**	**39,741**	**4,135**
Murder, capital and non-capital	281	185	66	173	15	9	—
Attempted murder	139	111	7	112	6	6	—
Manslaughter	56	51	1	47	4	1	1
Rape	773	395	129	528	—	27	—
Other sexual offences	8,974	3,203	1,338	2,891	37	354	28
Wounding	1,030	574	192	434	75	48	—
Assaults (not indecent)	59,149	21,934	23,700	19,719	1,001	1,177	149
Robbery	7,212	2,074	362	2,392	124	398	15
Breaking and entering	119,394	21,681	6,503	19,774	316	10,035	321
Theft, motor vehicle	44,768	9,595	2,572	6,901	127	4,389	96
Theft over $50	86,889	10,040	4,615	7,494	940	2,504	180
Theft $50 or under	206,945	30,952	20,042	16,025	5,091	11,116	1,999
Having stolen goods	6,658	5,889	413	4,232	335	1,099	77
Fraud	41,497	20,434	5,039	9,367	1,191	317	54
Prostitution	2,055	1,836	11	357	1,487	5	11
Gaming and betting	2,495	2,226	82	3,329	248	28	—
Offensive weapons	4,116	3,087	530	2,670	118	273	6
Other Criminal Code[1]	193,640	50,818	32,824	45,913	4,021	7,955	1,198
Federal Statutes[2]	**35,226**	**27,861**	**3,449**	**22,888**	**1,891**	**792**	**497**
Narcotic Control Act	2,584	1,317	90	1,317	376	91	37
Controlled Drugs under the Food and Drugs Act	290	50	18	44	5	3	2
Provincial Statutes[1]	**296,504**	**272,583**	**12,352**	**247,304**	**19,382**	**7,109**	**1,772**
Municipal By-laws[1]	**69,532**	**50,524**	**12,007**	**41,763**	**5,833**	**2,230**	**146**
1968							
Criminal Code	**897,530**	**204,125**	**121,211**	**150,257**	**15,709**	**47,503**	**4,885**
Murder, capital and non-capital	315	230	31	209	27	24	2
Attempted murder	181	135	15	105	18	8	1
Manslaughter	59	53	1	43	6	3	1
Rape	892	437	145	598	—	34	2
Other sexual offences	9,732	3,462	1,477	2,977	23	463	41
Wounding	1,293	798	213	515	98	242	33
Assaults (not indecent)	66,690	23,297	29,468	20,942	1,211	1,263	180
Robbery	8,382	2,492	481	2,765	165	521	13
Breaking and entering	144,895	25,591	9,284	16,402	353	12,420	359
Theft, motor vehicle	51,712	10,282	2,749	7,502	150	4,874	120
Theft over $50	99,167	11,191	5,838	8,577	879	3,069	188
Theft $50 or under	232,941	33,681	25,866	18,220	5,134	12,949	2,388
Having stolen goods	7,725	6,910	462	4,964	339	1,369	144
Fraud	48,556	24,275	5,865	10,929	1,326	362	72
Prostitution	1,996	1,897	26	519	1,475	16	19
Gaming and betting	2,115	1,889	42	2,418	142	15	1
Offensive weapons	5,013	3,719	724	3,148	91	468	9
Other Criminal Code[1]	215,866	53,786	38,524	49,424	4,272	9,403	1,312
Federal Statutes[2]	**40,058**	**30,891**	**5,323**	**25,193**	**1,654**	**1,132**	**647**
Narcotic Control Act	4,761	2,290	362	2,351	458	230	61
Controlled Drugs under the Food and Drugs Act	682	189	124	161	12	11	3
Provincial Statutes[1]	**317,912**	**250,963**	**54,340**	**229,323**	**16,374**	**7,050**	**2,076**
Municipal By-laws[1]	**74,501**	**52,206**	**12,855**	**44,412**	**5,485**	**2,534**	**195**

[1] Except traffic. [2] Except traffic, Narcotic Control Act and Food and Drugs Act.

During 1968, police departments in Canada reported 101,360 Criminal Code traffi offences, resulting in 66,309 persons charged, 1,632 of them females. Total charges reporte under federal statutes numbered 9,803, provincial statutes 1,952,404 and municipal by-law 365,256, excluding parking violations; the latter numbered 4,844,965, most of them reporte by municipal police. There are certain traffic offences under provincial statutes which a almost identical to those under the Criminal Code. These are shown separately for 196 and 1968 in Table 27.

The number of traffic accidents reported was 649,969, of which 4,423 involved fatalitie 113,214 resulted in injuries and 379,419 involved property damage of over $100. The were 5,371 persons killed in traffic accidents, including 3,911 drivers and passenger 1,217 pedestrians, 180 cyclists and 63 others; persons injured numbered 167,314.

27.—Traffic Enforcement Statistics, by Type of Offence, 1967 and 1968

Year and Offence	Actual Offences	Offences Cleared		Persons Charged	
		By Charge	Otherwise	Male	Female
	No.	No.	No.	No.	No.
1967					
Criminal Code	**93,235**	**64,696**	**4,564**	**60,594**	**1,3**
Criminal Negligence—					
Causing death	209	204	—	203	
Causing bodily harm	69	66	1	63	—
Operating motor vehicle	369	342	9	323	
Failing to stop or remain at scene of accident	36,849	9,875	3,926	7,816	3
Dangerous driving	4,867	4,405	138	4,229	
Driving while intoxicated	3,450	3,407	19	3,335	
Driving while impaired	37,688	36,824	429	35,829	7
Driving while disqualified	9,734	9,573	42	8,796	
Federal Statutes (except parking)	..	..	..	**13,647**	
Provincial Statutes (except parking)	..	..	..	**1,589,965**	
Municipal By-laws (except parking)	..	..	..	**365,183**	
Provincial Statutes[1]	**52,204**	**45,218**	**1,432**	**42,257**	**2,4**
Failing to stop or remain at scene of accident	10,659	5,028	879	4,473	2
Dangerous driving	39,867	38,541	540	36,145	2,1
Driving while disqualified	1,678	1,649	13	1,639	
1968					
Criminal Code	**101,360**	**68,847**	**5,652**	**64,677**	**1,6**
Criminal Negligence—					
Causing death	218	208	1	201	
Causing bodily harm	83	72	—	74	—
Operating motor vehicle	400	364	4	340	
Failing to stop or remain at scene of accident	40,872	10,072	4,847	7,934	4
Dangerous driving	5,291	4,892	121	4,635	
Driving while intoxicated	3,664	3,632	23	3,563	
Driving while impaired	41,452	40,421	589	39,296	9
Driving while disqualified	9,380	9,186	67	8,634	
Federal Statutes (except parking)	..	..	..	**9,803**	
Provincial Statutes (except parking)	..	..	..	**1,952,404**	
Municipal By-laws (except parking)	..	..	..	**365,256**	
Provincial Statutes[1]	**61,155**	**52,043**	**2,381**	**48,875**	**2,**
Failing to stop or remain at scene of accident	12,654	5,163	1,474	4,673	
Dangerous driving	46,628	45,054	880	42,405	2,4
Driving while disqualified	1,873	1,826	27	1,797	

[1] Provincial traffic offences almost identical to those under the Criminal Code.

CHAPTER X.—LAND USE AND RENEWABLE RESOURCE DEVELOPMENT*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

Section 1.—Trends in Planned Resource Development

Canada's era of settlement ended as the northern areas of the Prairie Provinces came der cultivation in the 1930s. Government policies, previously directed mainly toward e large-scale utilization of natural resources, have evolved toward concern with land use d the socio-economic circumstances of people involved in renewable resource-based dustries. Undiscriminating land settlement policies and ill-advised individual choices d resulted in the settlement of some submarginal land throughout Canada, but most tably in the southern areas of Alberta and Saskatchewan, creating the need for land- e adjustment even before settlement had been completed. Far more significant than is, however, is the technological revolution in agriculture which has occurred during the st three decades concurrently with improvements in transportation and a strong trend ward the concentration in urban centres of a growing population.

Accompanying these changes has been an altered pattern of land use resulting from dividual response to economic factors; but the rate of such adjustment has not been ncomitant with the magnitude of the socio-economic dislocation in rural areas. Because this situation, and because of increased concern with forest management, water pollution ntrol, recreational resources and wildlife management, the trend has been for a vast crease in public decision-making with respect to resource management and use. Implicit this has been the need for improved legislative-administrative organization relative to tural resources.

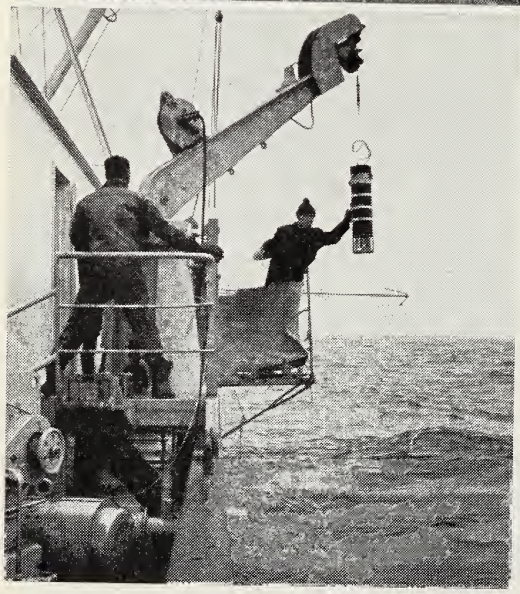
Of late, a growing popular movement concerned with the quality of the environment s become evident. A series of alarms over the contamination of water, food, air and soil s led many people to seek remedial action. It may be that these groups are pointing the y to a new outlook on renewable resources, one which takes into full consideration the nsequence of man's plans for development upon the environment.

There have been a number of federal investigations of significance to the general problem organization for resource use: the Senate of Canada Special Committee on Land Use, tablished in 1957 and continuing until 1963; the House of Commons Standing Committee

* Revised (June 1970) in the office of the Canadian Council of Resource Ministers, Montreal, Que.

Young red and white pine, white sp and poplar trees flourish in a g that, fourteen years previously, badly eroded by water and wir

Seed, herbicide and fertilizer b sprayed from the air over mar farmland in southern Ontario. technique can turn rough, thin-s land into rich usable pasture.



Sulphur removal processes invo reactions with solids, liquids and are undergoing exhaustive test electrical utilities. Sulphur oxides high among power-station air-poll emissions.

A water quality monitor being lowered from a Canadian research vessel into the depths of Lake Ontario.

Mines, Forests and Waters; and the National Conference on Reconstruction held in 1945. otable among several provincial government activities along similar lines is the annual itish Columbia resources conference.

One of the most important responses to this need to define goals was the "Resources r Tomorrow" Conference held in 1961 to permit examination of problems of resource use d the interaction of resource specialists in the face of modern requirements for integrated, mprehensive resource-use planning for social and economic development. As a result of commendations from this Conference, the Canadian Council of Resource Ministers, com- sed of one representative from each province and one from the Federal Government, was tablished to perform a similar function on a continuing basis, with the aid of a Montreal- sed staff.

The Canadian Council of Resource Ministers provides an intergovernmental forum r the exchange of views and information on current problems in renewable resources. itially, Council concerned itself with intensive work in a limited number of areas producing rveys on resource agreements, the administrative framework of water resources manage- ent, and later outdoor recreation management. Council also sponsored several conferences its early years, the most notable being the National Conference on Pollution and Our nvironment in 1966 which involved over 600 representatives from government, industry, iversities and public-interest groups in the exploration of environmental pollution. In 70, Council extended its role of intergovernmental consultation through the work of intergovernmental committees working on specific problems in forestry, land, pollution, ater, the North, and integrated resource use. Among the projects expected to be com- eted within the year are a Forestry Seminar, an Intergovernmental Workshop on Pollu- n, surveys on land tenure, and surveys on several northern problems.

Constitutionally, administration and disposition of natural resources rest mainly with e provincial governments. Under the British North America Act, fisheries were under deral jurisdiction and the federal and provincial governments shared legislative authority th respect to agriculture, international and interprovincial waters, etc., with federal gislation taking precedence over provincial legislation should conflict arise; however, bsequent interpretations of the Act have established most aspects of control of resources being matters of provincial jurisdiction. As well, in the years following Confederation rtain provinces, by agreement, assumed varying degrees of responsibility for administering e fisheries legislation and other federal resources legislation. Within this general frame- rk, the Federal Government has taken certain steps to establish a national resources licy, to co-ordinate the activity of the various federal departments concerned with ources and relevant social and economic problems, to undertake or share in research, d to provide initiative and financial assistance in the establishment of programs of resource justment and development; and provincial governments have moved significantly to commodate their administrative structures to the need for integrated, planned resource justment and development.

Federal activity in resource conservation programs began before the turn of the ntury, starting in 1877. This included the work of the now long-disbanded Department the Interior in the field of surveying and development of water resources in Western nada. There have been numerous programs under the International Boundary Waters reaty Act of 1911 undertaken by the International Joint Commission established to fulfil e provisions of the treaty and the confirming Act. Later programs included those con- cted under the Prairie Farm Rehabilitation Act which was enacted in 1935 to aid in the abilitation of drought-stricken areas of the prairies, the work on the eastern seaboard nducted under the Maritime Marshland Rehabilitation Act of 1948, water development jects under the terms of the Canada Water Conservation Assistance Act of 1953, projects der the Atlantic Development Board Act of 1962, the broad and comprehensive resource velopment and adjustment programs being undertaken under the terms of the Agricul- ral and Rural Development Act of 1966 (previously, the Agricultural Rehabilitation d Development Act of 1961), and the Fund for Rural Economic Development Act in

1966. Over this period many projects of varying nature and scope have been undertaken all toward the basic objective of achieving more effective utilization of Canada's land an water resources and the provision of a greater degree of economic stability and equitabilit for the rural areas of the country.

Section 2.—Government Agencies Concerned with Resource Use

Numerous agencies of the Federal Government and of the ten provincial governmen have a more or less direct concern with renewable resources. The Federal Governme undertakes direct action in areas under federal jurisdiction—the Northwest Territorie Indian reservations, limited federal forest preserves, national parks, certain internation parks and waterways, certain aspects of fisheries, and matters relative to public health, nav gation and certain aspects of agriculture. For the most part, the Federal Government h participated in the development and management of renewable resources through share cost programs with the provinces (see also Chapter XXIII, Sect. 4). The provinci governments, then, oversee the routine management of these resources.

Federal agencies whose activities impinge fairly directly on renewable resource develo ment and use are as follows:—

Canada Department of Agriculture—Research Branch, Economics Branch, Prairie Far Assistance Administration, and Information Division

Department of Fisheries and Forestry—Conservation and Protection Branch, Resour Development Branch, Information and Consumer Branch, Economics Branch, Director of Program Co-ordination, Forest Products Laboratory, and Eastern Rockies For Conservation Board

Department of Indian Affairs and Northern Development—National and Historic Par Branch, Canadian Wildlife Service, and Northern and Economic Development Branch

Ministry of Transport—Marine Administration, and Canadian Meteorological Service

Department of National Health and Welfare—Occupational Health Branch, and Pub Health Engineering Branch

Department of Finance—Economic Analysis Branch, Government Finance and Capi Markets Branch, Resource Programs Division, Economic Development Division, T Policy Branch, and Federal-Provincial Relations Branch

Department of Veterans Affairs—Veterans' Land Administration

Department of Energy, Mines and Resources—Four Departmental Sectors are concern with mines and geosciences, mineral development, energy development, and water, cluding the Geological Survey of Canada, Surveys and Mapping Branch, Marine Scien Branch, Inland Waters Branch, and Policy and Planning Branch

Department of Regional Economic Expansion

National Research Council of Canada

National Energy Board

Economic Council of Canada.

Various Crown corporations, credit agencies, advisory committees and boards, a quasi-governmental organizations also have interests in the fields of resource developme including:—

Farm Credit Corporation
Fisheries Research Board of Canada
Northern Canada Power Commission
Advisory Committee on Northern Development
Advisory Committee on Water Use Policy
Central Mortgage and Housing Corporation
National Harbours Board
St. Lawrence Seaway Authority
Northern Transportation Company
Interdepartmental Advisory Committee on Forestry Statistics
Interdepartmental Co-ordinating Committee for ARDA

Canadian Council on Rural Development
Interdepartmental Committee on Resources
National Committee for the International Hydrologic Decade
Canadian Committee of the International Biological Program.

The Dominion Bureau of Statistics has, of course, functions relevant to nearly all pects of the national life, including resources. The above agencies are not identified with particular department, and function more or less autonomously but are usually associated h a Minister of the Crown for purposes of reporting to Parliament (see pp. 137-161). hough each of these agencies carries out programs bearing on the use and development natural resources, direct unilateral action is unusual except relative to lands and waters der the jurisdiction of the Federal Government. Major exceptions are the Prairie Farm habilitation Administration programs and significant federal programs for the conserva- n and development of the various fisheries resources. Major items of federal legislation ative to renewable resources include:—

The Department of Agriculture Act
The Prairie Farm Rehabilitation Act
The Farm Credit Act
The Department of Fisheries Act
The Forestry Development and Research Act
The Agricultural and Rural Development Act
The Fund for Rural Economic Development Act
The National Parks Act
The Migratory Birds Convention Act
The International River Improvements Act
The Dominion Water Power Act
The Canada Water Conservation Assistance Act
The Atlantic Provinces Power Development Act
The Navigable Waters Protection Act
The Veterans' Land Act
The Economic Council of Canada Act
The National Energy Board Act
The National Harbours Board Act
The St. Lawrence Seaway Authority Act
The Resources and Technical Surveys Act
The Fisheries Development Act
The Canada Shipping Act
The Arctic Waters Pollution Prevention Act
The Northern Inland Waters Act
The Canada Water Act.

The major provincial agencies concerned with development of renewable resources :—

Newfoundland—Department of Fisheries, and Department of Mines, Agriculture and Resources
Prince Edward Island—Department of Fisheries, and Department of Industry and Natural Resources
Nova Scotia—Department of Fisheries, Department of Lands and Forests, and Nova Scotia Water Resources Commission
New Brunswick—Department of Fisheries, and Department of Natural Resources
Quebec—Conservation Branch of the Department of Lands and Forests, Department of Natural Resources, and Department of Tourism, Game and Fish
Ontario—Conservation Authorities Branch and Air Management Branch of the Department of Energy and Resources Management, and Ontario Water Resources Commission
Manitoba—Water Control and Conservation Branch of the Department of Mines and Natural Resources
Saskatchewan—Department of Natural Resources
Alberta—Department of Lands and Forests, and Eastern Rockies Forest Conservation Board
British Columbia—Department of Lands, Forests, and Water Resources, and Fish and Wildlife Branch and Provincial Parks Branch of the Department of Recreation and Conservation.

Section 3.—International Boards and Commissions

The continental context of Canadian resource management is implicit in the purpo of the various international boards and commissions in which Canada participates. Of 35 or more, some 25 are concerned with water and most of the remainder have to do w fisheries.

The International Joint Commission was established to fulfil the provisions of International Boundary Waters Treaty of 1909 between the United States, Great Brit and Canada. Three commissioners are appointed by the President of the United Sta and three by the Government of Canada. The Commission deals with the use, obstruct and diversion of boundary waters and rivers crossing the International Boundary. conducts investigations on water use problems with international implications and rep its findings with recommendations to both governments.

International boards of control that report to the International Joint Commission a a ten-member International St. Lawrence Board of Control, concerned with levels of L Ontario and the regulation of outflow from the lake; a two-member St. Croix Board, c cerned with water levels and supervision of dam construction; the Lake of the Woods Boa the Lake Superior Board, the Rainy Lake Board and the Kootenay Board, all of which concerned with water levels; a two-member Columbia River Board, concerned with effects of the Grand Coulee dam; a four-member Souris River Board, concerned w allocation of water; and a five-member Niagara Board, concerned with levels of Gr Island Pool and the Lake Erie ice boom. Functions similar to those of the Boards carried out by two accredited officers relative to measurement and apportionment of wa of the St. Mary and Milk Rivers. Also reporting to the International Joint Commiss are five international engineering boards for the Saint John, St. Croix, Souris and R Pembina and Columbia Rivers. A seven-member Technical Advisory Board on Pollution is concerned with air pollution by ships plying the Detroit River. An Advis Board on Control of Pollution of Boundary Waters, reporting to the International Jo Commission, is concerned with the connecting channels of the Great Lakes, and ot boards concerned with pollution are: the Advisory Board on Pollution Control—St. C River, the International Red River Pollution Board, the International Lake Erie Wa Pollution Board and the International Lake Ontario–St. Lawrence Water Pollution Boa The eight-member International Great Lakes Levels Board is concerned with investiga and study of water levels of international or boundary waters, reporting to the Internati Joint Commission.

The International North Pacific Fisheries Commission, composed of four mem each from Canada, the United States and Japan, operates to fulfil the terms of the In national Convention for the High Seas Fisheries of the North Pacific Ocean, the objec of which is to achieve maximum sustained yield in non-territorial waters by co-ordina of the studies necessary to determine appropriate application of treaty principles. Great Lakes Fisheries Commission, composed of two national sections of three mem each, formulates and co-ordinates research programs and recommends programs for eradication or control of sea lamprey populations. Responsibility for Canada's tr obligations is shared by arrangement between the Federal Government and the Governm of Ontario. The Northwest Atlantic Commission operates under the International C vention for the Northwest Atlantic Fisheries signed by Canada, the United States, United Kingdom, France, Spain, Denmark, Portugal, Iceland, Norway, Italy, East Germ and the Soviet Union. All contracting governments are represented on the Commis and panels have been established with jurisdiction over defined areas of particular inte to some signatories. The Commission has no regulatory powers but conducts scien investigations and recommends measures to maintain stocks of fish. The North Pa Fur Seals Commission operates under the Interim Convention on Conservation of N Pacific Fur Seals signed by Canada, the United States, Japan and the Soviet Union, un taking research, recommending enforcement measures required to eliminate pelagic sea

on the high seas, and overseeing the apportionment of skins from the Pribilof, Commander and Robben Islands. The International Whaling Commission, composed of representatives of Australia, Brazil, Argentina, France, South Africa, the United States, the United Kingdom, Canada, Norway, New Zealand, Iceland, Japan, Panama, Mexico and Denmark, has power to amend whaling rules and regulations of the International Convention, and to recommend new regulations with respect to the conservation and use of the resource. The Roosevelt-Campobello International Park Commission is concerned with the administration and development of the Campobello Island estate of the late Franklin D. Roosevelt as an international park.

Section 4.—Federal and Federal-Provincial Resource Development Programs*

Subsection 1.—Land Resources Development

Information available regarding Canada's land resources is shown in Table 1, where the land area is classified as occupied agricultural, forest and "other" land, the last including urban land, road allowances, grass and brush land and all waste land such as open muskeg, swamp and rock. The Department of Fisheries and Forestry estimates that about 48 p.c. of the land area of Canada is forested and, according to the Census of 1966, less than 8 p.c. is classed as occupied farm land. A great part of the 1,599,542 sq. miles of "other" land is located in the Yukon and Northwest Territories which together have a land area of 1,458,784 sq. miles. The occupied farm land in these Territories is almost nil and the forest area is estimated at 275,800 sq. miles.

On the basis of information currently available, it is estimated that, in addition to the present arable land across the country, about 40,000,000 acres of virgin land can be used for arable crops if the need arises. However, most of these reserves will require clearing or other improvement measures before they can be used for agriculture. In addition to the present arable land and potentially arable land, 55,000,000 to 60,000,000 acres are suitable for wild pasture.

As the Canada Land Inventory progresses, a great deal of detailed information is becoming available on the land resources of the country, their present utilization and their capability. This project, initiated under the ARDA administration and continued by the Department of Regional Economic Expansion, is the vehicle for detailed classification of the land resources of Canada. The Inventory will map present land use and assess land capability for such different uses as agriculture, forestry, recreation and wildlife in and adjacent to the settled portions of Canada. The vast amount of information obtained will be stored on computer tapes, analysed and published in map or other form in such a way that the Inventory will become a working tool in resource planning and rural development programs throughout the country. About 100 agencies of the 10 provincial and the North-west Territories governments are involved in the Inventory, as well as numerous universities, private companies and individuals. By late 1970, the present land-use phase of the Inventory will be virtually complete and substantial progress will have been achieved in the agriculture, forestry, wildlife and recreation phases. Capability maps at a scale of 1:250,000 may be obtained from Information Canada as they become available.

The Prairie Farm Rehabilitation Act of 1935 provided for rehabilitation of areas subject to drought and wind erosion in the Prairie Provinces and in 1937 was amended to broaden its scope to include land utilization and resettlement. In the main, the PFRA's land-use programs have involved the establishment of community pastures on land submarginal for cereal crop production, and over the years this program has resulted in the establishment

* Federal and provincial programs for the conservation and development of the fisheries resources of Canada are discussed at pp. 648-664 of this volume; provincial and territorial conservation of fur resources programs at pp. 670-675; federal and provincial forestry programs at pp. 630-637; and wildlife resources and conservation at pp. 55-58.

1.—Land Area classified as Occupied Agricultural or Forest, by Province

NOTE.—Figures for occupied agricultural land were obtained from the 1966 Census; areas of forest land were compiled by the Department of Fisheries and Forestry from estimates supplied by the Forestry Service in each province.

Description	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Y.T. and N.W.T.	Canada
	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles
Occupied Agricultural Land—												
Improved—Crops and summer fallow	20	627	495	677	8,149	13,419	17,754	67,053	38,073	1,676	2	147,945
Pasture	8	238	207	261	3,314	4,587	1,204	2,984	3,611	683	—	17,097
Other	4	25	57	60	458	750	489	1,008	935	163	1	3,950
Unimproved—Forest (woodland)[1]	21	437	1,694	1,522	5,902	4,429	1,895	2,106	2,905	1,250	1	22,162
Other	24	121	440	311	2,311	4,668	8,476	29,051	31,012	4,497	5	80,916
Totals, Occupied Agricultural Land	**77**	**1,448**	**2,893**	**2,831**	**20,134**	**27,853**	**29,818**	**102,202**	**76,536**	**8,269**	**9**	**272,070**
Forest Land—												
Softwood— Merchantable	24,422	78	7,270	6,297	75,687	44,109	14,669	10,573	14,483	80,330	35,200	313,118
Young growth	5,835	396	789	2,889	40,922	35,925	20,366	3,413	14,042	87,786	10,000	222,363
Mixedwood—Merchantable	403	133	5,250	7,298	47,500	24,533	5,459	9,011	12,636	—	19,800	132,023
Young growth	269	145	458	2,042	26,281	34,289	6,514	5,046	11,308	—	3,500	89,852
Hardwood— Merchantable	9	13	841	1,939	14,391	6,559	3,403	9,205	5,255	3,945	4,700	50,260
Young growth	244	11	45	952	14,344	17,961	4,767	1,773	13,728	7,953	2,500	64,278
Unclassified[2]	2,680	37	427	2,470	1,500	1,191	3,011	3,122	45,120	28,397	—	87,955
Totals, Productive Forest Land	33,862	813	15,080	23,887	220,625	164,567	58,189	42,143	116,572	208,411	75,700	959,849
Non-productive Forest Land[3]	53,930	122	1,194	442	157,500	97,175	64,631	75,595	41,023	59,227	200,100	750,939
Totals, Forest Land	**87,792**	**935**	**16,274**	**24,329**	**378,125**	**261,742**	**122,820**	**117,738**	**157,595**	**267,638**	**275,800**	**1,710,788**
Net Productive Land[4]	**33,918**	**1,824**	**16,279**	**25,196**	**234,857**	**187,991**	**86,112**	**142,239**	**190,203**	**215,430**	**75,708**	**1,209,757**
Other Land[5]	**55,197**	**238**	**2,929**	**2,197**	**131,503**	**58,926**	**61,032**	**2,348**	**17,574**	**84,622**	**1,182,976**	**1,599,542**
Totals, Land Area[6]	**143,045**	**2,184**	**20,402**	**27,835**	**523,860**	**344,092**	**211,775**	**220,182**	**248,800**	**359,279**	**1,458,784**	**3,560,238**

[1] Included in *Forest Land;* duplication eliminated in the item *Net Productive Land.* [2] Includes areas of recent burn, cut-over or windfall not yet re-stocked. [3] Areas incapable of producing crops of merchantable timber because of adverse climatic, soil or moisture conditions, and reserve forest lands for which no inventories are available. [4] Includes only occupied agricultural land (less forest woodland) plus productive forest land. [5] Comprises all other land such as urban land, road allowances, grass and brush land and all waste land such as open muskeg, swamp and rock and also unclassified land. [6] *Net Productive Land* plus *Non-productive Forest Land* plus *Other Land.*

of 87 operating community pastures, with five more under construction, totalling 2,500,000 acres, at a cost of $10,000,000. The PFRA also operates a tree nursery at Indian Head in Saskatchewan, which distributes trees free to farmers for farm and field shelterbelts.

The Agricultural Rehabilitation and Development Act, proclaimed in 1961, arose out of recognition of a national interest in achieving better land use, improving the viability of farm units at present uneconomic, and improving employment and income opportunities in rural areas. In many areas of Canada, income is unacceptably low and land use faulty or inefficient. To some considerable degree these economic, social and conservation problems have been caused by farm mechanization which places smaller, less-mechanized farms at a disadvantage; a notable symptom of this is the decrease in the number of farms in Canada from about three quarters of a million in 1931 to less than half a million (431,000) in 1966.

The Act, amended in 1966 as the Agricultural and Rural Development Act and supplemented by the Fund for Rural Economic Development Act 1966, is enabling legislation intended to be complementary and supplementary to existing federal and provincial legislation in respect of renewable resources and rural social and economic development; to aid in correlation and expansion of existing programs; and to fill gaps. As such, it has considerable potential as an instrument for programs of alternate land use, soil and water conservation, development of rural income and employment opportunities, and for research. ARDA is a federal-provincial program which operated from its inception to Mar. 31, 1965 under a federal-provincial General Agreement, and after that time under the Federal-Provincial Rural Development Agreement covering the period 1965-70. On Mar. 31, 1970, the second ARDA agreement expired. New agreements are under negotiation with the individual provinces to continue this project. Under the General Agreement, ARDA approved projects involving a federal share totalling $34,517,000 of which $13,484,000 was expended during the period. The federal share is usually in the order of 50 p.c. of total cost. The Federal-Provincial Rural Development Agreement 1965-70 provided for an expenditure of $125,000,000 during that period. In addition, $300,000,000 was provided under the Fund for Rural Economic Development Act to finance major projects in special rural development areas.

To the end of March 1968, $135,233,000 was spent on 1,051 projects under the second ARDA agreement, the federal share being $65,269,000. Examples of ARDA projects are the creation of a comprehensive development plan for the Edson area in Alberta, the development of irrigation and water supply in British Columbia, the provision of community pastures in Saskatchewan, and small projects on river-course development in Quebec. Four projects for comprehensive regional development are under way—the Northeast and the Mactaquac projects in New Brunswick, the Gaspé–Lower St. Lawrence–Magdalen Islands project in Quebec, and the Interlake project in Manitoba. Three other studies are under consideration—one on Prince Edward Island, one on northeastern Nova Scotia and one on the west coast of Newfoundland.

Subsection 2.—Water Resources Development

The first federal-provincial water development program was established to deal with the special situation that arose as the result of the drought in the Prairie Provinces in the 1930s. Since 1935, the Prairie Farm Rehabilitation Administration (PFRA) has, in addition to other resource-development functions, provided engineering and financial assistance for some 91,000 small dams and dugouts (small artificial ponds for water collection) to supply water for livestock, irrigation and domestic use. In the main, such works serve individual farmers but some serve groups of farmers or communities. The PFRA provides free engineering services and contributes toward the cost of construction of community projects on larger watersheds. Also, because of its engineering experience, the PFRA has been involved in larger-scale irrigation and water development projects, including renovations to the Bow River project in Alberta and the construction of the recently completed South Saskatchewan River development project. Land reclamation projects

have been carried out in Manitoba along the Saskatchewan and Pasquia Rivers near The Pas, along the Assiniboine River between Portage la Prairie and Headingly, at various points in the Interlake region, and along the Northwest Escarpment. The Assiniboine River project includes the creation of a reservoir near Shellmouth and construction of a diversion canal near Portage la Prairie to carry floodwaters to Lake Manitoba.

The Atlantic Development Board, which was set up in 1962 to prepare, in consultation with the Economic Council of Canada, an over-all co-ordinated plan for the promotion of the economic growth of the Atlantic region, initiated, among other projects, a number relative to water use for power production and for industry. Although in 1970 the Board was replaced by the Atlantic Development Council, set up to advise the federal Minister of Regional Economic Expansion on Atlantic problems, many of the programs undertaken by the Board are being continued under the Federal Government's co-ordinated program of regional development. The most notable of the Board's projects relating to water resources were: the provision of a $20,000,000 grant toward the $120,000,000 Mactaquac dam in New Brunswick and a similar grant toward Newfoundland's $88,000,000 Bay d'Espoir hydro-electric project; assistance in the development of water supplies to meet the needs of industries—mainly fish processing plants—in some 35 communities; commitment of $2,000,000 toward abatement of industrial pollution in inland waters of the region; and, as part of its planning activities, the engagement of consultants to carry out a $1,500,000 study on the supplies of water in the region and the demands that are likely to be made upon them up to 1981 and beyond.

Other federal and federal-provincial programs or studies concerned with water, recently completed or under way, are: the Greater Winnipeg Floodway program, a 30-mile floodway past Winnipeg constructed at an estimated cost of $63,000,000, of which the Federal Government's share is about $43,700,000; the allocation of water from interprovincial streams to be recommended by the Prairie Provinces Water Board; a four-year, $15,000,000 water-supply study of the Saskatchewan–Nelson Rivers basin by the Saskatchewan–Nelson Rivers Basin Board; a co-ordinated study of Ontario rivers flowing into James Bay and Hudson Bay, to assess their quantity and quality as well as the present and future requirements for these waters, and suggest alternative possibilities for their use; the 10-year Fraser River agreement between British Columbia and the Federal Government to provide flood protection on the Fraser delta; and a considerable number of varied hydrologic and water-quality studies conducted by the Department of National Health and Welfare, the National Research Council, the Ministry of Transport, the Department of Energy, Mines and Resources, the Department of Fisheries and Forestry and several other agencies.

The Federal Government in 1970 passed three new and important pieces of legislation related to water resources management: the Arctic Water Pollution Prevention Act (SC 1969-70, c. 47) authorizes measures to forestall a major pollution disaster in Canada's Arctic Waters; the long-awaited Canada Water Act (c. 52) provides the legislative base to designate water quality management areas and to establish intergovernmental committees or agencies to advise on questions of water management and to conduct management programs, and authorizes the punishment of pollution offenders and the banning of phosphates in detergents; and the Northern Inland Waters Act (c. 66) provides for the licensing and regulation of water use in the Northwest Territories and contains provisions against water pollution. Other legislative initiatives in the area of water pollution included amendments to the Canada Shipping Act regarding regulations for disposal of sewage and garbage from ships, and amendments to the Fisheries Act concerning water pollution affecting fish.

Each provincial government has programs in pollution control as an aspect of resource management, either centred in one agency or divided among several. The major responsible agencies in each province are:—

Newfoundland—Newfoundland and Labrador Water Authority
Prince Edward Island—Prince Edward Island Water Authority
Nova Scotia—Nova Scotia Water Authority

New Brunswick—New Brunswick Water Authority
Quebec—Quebec Water Board, and Department of Health
Ontario—Ontario Water Resources Commission, and Department of Health
Manitoba—Clean Environment Commission
Saskatchewan—Water Resources Commission
Alberta—Division of Environmental Health Services, Department of Health
British Columbia—Pollution Control Branch, Department of Lands, Forests and Water Resources.

These provincial agencies oversee environmental quality through such various means regulation and licensing of waste discharge, attendance to complaints, construction of ks, technical assistance and research. One way in which the Federal Government sts is by low-cost loans to municipalities for sewage-treatment plants and related facili- From 1960 to 1968, $272,000,000 was lent by the Central Mortgage and Housing poration for 1,381 projects in 905 municipalities.

Pollution control has a special international aspect, particularly because of the long der of water separating Canada and the United States along the Great Lakes–St. rence waterway. In 1969 a report was made to the International Joint Commission pollution in Lake Erie, Lake Ontario and the international section of the St. Lawrence er. Many of the recommendations for municipal and industrial waste treatment, con- of pollution from land drainage, and control of oil and industrial spills are expected to adopted by the Commission.

In the immediate future, pollution should come even more to the forefront of govern- t activities. It is expected that more legislation will be updated and government hinery will continue to evolve to meet this challenge of management.

e marsh at the Wildlife Centre d, Ontario, re- d by the Cana- fe Service to e public and heir interest in d its environ- ys, films, slide demonstrations e's theatre and explain how nged the marsh rounding hard- forest.

CHAPTER XI.—AGRICULTURE

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

Section 1.—Agricultural Trends and Highlights in 1969 and 1970*

Today's farmer, as both a primary producer and a user of end products, plays integral role in Canada's economic structure. Not only does he provide food in increas quantities for a growing urban population but he also, through substantial expenditu on goods and services, contributes extensively to the well-being of other industries a businesses.

During 1969, total farm operating expenses and depreciation charges reached a rec level of $3,429,100,000, an amount 1.8 p.c. above the corresponding amount in 19 Municipal real estate taxes were set at a high of $185,000,000. Higher wages and m hired help pushed the farm labour bill to more than $300,000,000. Machinery exper reached a new record level of $554,400,000, and feed expenditures rose to $554,500,000.

Through the years, farm purchases of machinery and other farm-related goods h encouraged the steady expansion of industrial employment. The farm machinery and f processing industries, particularly, are directly affected by farm prosperity but m payrolls in petroleum, rubber, automotive, hardware, paint and electrical plants are a based on farm customers. In addition, numerous manufacturing plants across the coun are engaged in the processing of goods produced on Canadian farms.

The increased use of machinery on farms has had its effect on farm numbers and the farm labour force. During 1969, total employment in Canadian agriculture 535,000 workers, including both family and hired help; that was 11,000 fewer than du the previous year and 146,000 fewer than in 1961. The number of Canadian farms decli from 481,000 in 1961 to 431,000 in 1966. By 1980, it is expected that there will be a about 315,000 farms in Canada.

*Prepared under the direction of S. B. Williams, Deputy Minister of Agriculture, Ottawa.

However, although farm numbers and employment are on the decline, farm production was higher in 1969 than in 1968, the increase coming mainly from larger wheat, oat and barley crops. There were smaller increases for rye, flaxseed and rapeseed crops and a reduction in the potato crop and in livestock production. On the other hand, farm cash receipts at $4,205,000,000 in 1969 declined 3.6 p.c. from those of 1968. These receipts include both initial farm receipts for agricultural products and supplementary government payments. The drop was mostly attributable to lower returns from wheat sales and Canadian Wheat Board participation payments, which were only partially offset by increased receipts from the sale of livestock and livestock products.

Farmers received about 4.8 p.c. more for their livestock and livestock products during 1969, despite a decline in the numbers of cattle and hogs marketed. Receipts from sales of dairy products, poultry and eggs were also higher and, on the crop side, there was an increase in receipts from flaxseed, rapeseed, grain corn, sugar beets, potatoes, fruits and tobacco. However, returns from field crops generally were down substantially. Farmers obtained only 35 p.c. of their income from field crops compared with 40 p.c. in 1968 and 42 p.c. during the 1962-66 period.

Net income was, of course, considerably smaller than farm cash receipts; it was estimated at $1,688,400,000, 3.1 p.c. below the 1968 level but 4.9 p.c. above the 1964-68 average of $1,609,400,000. This net income takes into consideration the value of changes in farm-held inventories of livestock and field crops between the beginning and the end of the year. Realized net farming income, which takes no cognizance of such changes, was $1,379,500,000, 10 p.c. below the 1968 value of $1,532,800,000 and 11.8 p.c. below the 1964-68 average value of $1,564,800,000. Increased farm operating expenses and depreciation charges, coupled with a drop in farm cash receipts, caused this decline.

Farmers continued to invest in real estate, livestock, machinery and equipment but the rate of investment declined. The 1967-to-1968 increase of 6.8 p.c. was the smallest in recent years. The 1969 increase in the value of farm real estate slowed down even more in most areas and in some parts of the country was lower than in 1968. There was also a decline in the amount of credit used by farmers. During 1968, some $2,177,000,000 in credit was extended to farmers, which was down from 1967. The total farm debt in 1968 was estimated at $4,105,000,000.

Looking to the 1970s, growing population and income are expected to create strong domestic markets for food and other farm products, particularly for beef, pork and poultry, and also to increase the demand for fruits, vegetables and cheese. By 1980 it is expected that Canada will require 52 p.c. more beef cattle, 40 p.c. more hogs and 69 p.c. more poultry than in 1970. As well, Canadians will spend only 18 p.c. of their dollar on food in 1980 compared with 20 p.c. in 1970.

Agricultural Highlights in 1969 and 1970

Most areas of Canadian agriculture were affected by new federal programs and legislation introduced during 1969 and the first half of 1970.

Early in 1969, Federal Government officials licensed the Mexican wheat variety *Pitic 62*, marking the first time in Canadian history that a licence was granted to a variety of non-milling hard red spring wheat. The new durum wheat variety, *Hercules*, was also licensed. Cattle breeders were again permitted to import cattle from France and Switzerland and from the beginning of this arrangement in 1965 to January 1969 more than 800 head of breeding stock had entered Canada through the maximum security quarantine station at Grosse Île, Que.

In February, the Agricultural Stabilization Board was authorized to make an interim deficiency payment on 1968 sugar beets of $2.50 per standard ton (250 pounds of sugar).

March was a busy month. More than 400 persons, representative of all aspects of Canadian agriculture, gathered in Ottawa at the Canadian Agriculture Congress. It was the largest meeting of its kind in 35 years. New regulations covering beef cattle entries in livestock fairs were announced, under which Record of Performance testing became a

prerequisite for two bull classes in 1970 and will be a requirement for all 1971 bull classes. The new hard red spring wheat, *Neepawa*, was licensed. A starch diversion program aimed at stabilizing prices to potato growers in the Atlantic region was announced, based on a support level of $1.85 per barrel for Canada No. 1 potatoes with an allowance of 25 p.c. for culls.

Also in March, the Federal Government's hog quality premium of $3.00 was adjusted to apply to carcasses with an index score of 105 or higher; previously, the premium had been paid for carcasses scoring 103 or higher. A $1,200,000 Federal Government contribution to Quebec's experimental crop insurance program was announced, which, coupled with provincial government subsidies, reduced the Quebec farmer's insurance premium by 50 p.c.

The Canadian Dairy Commission program for 1969-70 consisted of continued market price support for major dairy products and a direct subsidy to manufacturing milk and cream shippers under quotas established by the Commission. The support prices were: butter, 65 cents; skim milk powder, 20 cents; and cheese, 42 to 47 cents, depending on quality and the season of production. The direct rate of subsidy to farmers for manufacturing milk and cream was $1.25 per hundred pounds of milk, with an equivalent rate for cream. The one major change in the 1969-70 dairy policy was an increase in the holdback to farmers from 21 cents per hundred pounds to 26 cents, effective Apr. 1, 1969. The Commission also added a 52-cents-per-100-pounds subsidy holdback against surplus production. The holdback funds are used to cover the cost of exporting surplus dairy products.

In April, Canada's sheep growers were given a 29.4-cents-per-pound deficiency payment on the 1968-69 wool clip. Canada and France agreed to establish a new livestock import quarantine station on St. Pierre, a French island south of Newfoundland in the Gulf of St. Lawrence. From January to April, more than 230 head of French and Swiss cattle were cleared from the maximum security quarantine station at Grosse Île, Que., for shipment to farms across Canada.

During May, an agreement which opened the way for long-term Farm Credit Corporation loans to Indian farmers was given Cabinet approval.

In June, the Canada Department of Agriculture reorganized its Economics Branch to strengthen farm management and market research programs. The Canadian Farm Management Data System (CANFARM), a modern, computerized record-keeping system developed in co-operation with the provinces and a number of universities, is part of the reorganized Branch. Some 5,000 farmers were enrolled in the CANFARM program in 1970. Following consultations with British authorities, the Canadian Dairy Commission said it would control exports of cheddar cheese to British buyers during 1969. The arrangement provided for the sale of 29,000,000 pounds of Canadian cheese between Apr. 1, 1969 and Mar. 31, 1970.

In July, the Federal Government announced its price support program for the 1969 sugar-beet crop. Through deficiency payments, sugar beets were supported at a national average level of $15.98 per standard ton (250 pounds of sugar) delivered to the processing plant. Sugar beets are grown in Alberta, Manitoba and Quebec.

In late September, the Canadian Dairy Commission announced that the summer support price for first-grade cheddar cheese—46½ cents for 92 score and 47 cents for 93 score or better—would continue to the end of October. The support price for cheese manufactured from Nov. 1, 1969 to Mar. 31, 1970 was set at 42 cents a pound.

In early October, Cabinet approval was given to an agreement to provide loans for the co-operative purchase and use of farm machinery, buildings and installed equipment to syndicates of three or more Indians farming on a reserve. Later that month, it was announced that Feed Freight Assistance Program rates would be reduced effective Nov. 1, 1969.

In early November, the new Canada Agriculture Research Laboratory at Harrow in Ontario was opened. The Minister headed the Canadian delegation to the 15th Biennial

ference of the Food and Agriculture Organization in Rome. Details of the 1969-70 e support program for wool were announced later in the month; the program gave a port price of 60 cents per pound of eligible grades of wool.

In December, a deficiency payment of $3.23 per standard ton of sugar beets produced growers in the 1968 crop year was announced. The first mailings of CANADEX, a nical information system covering new agricultural developments and technology, e made by the Department's Information Division. The service was made available xtension workers and instructors in agriculture.

A cutback in the use of DDT marked the opening of 1970. Under the Pest Control ducts Act, the pesticide could be registered for use on only 12 agricultural crops. In 9, DDT had been registered for insect control of 62 food crops. Effective Jan. 5, 1970, quality premium on hog carcasses scoring an index of 105 or higher was reduced from 0 to $1.50. Also in January, a new variety of six-rowed barley, *Bonanza*, was licensed.

With February came Operation LIFT, the Federal Government's Wheat Inventory uction Program designed to reduce Canada's wheat inventory by discouraging produc- in 1970. Farmers who reduced wheat acreage and increased summerfallow by a esponding amount received federal compensation payments of $6.00 per acre. There an additional $4.00 an acre payment for net increases in perennial forage crops. As a her incentive toward acreage reductions, 1970-71 wheat delivery quotas were changed based largely on total acreage of summerfallow and the net increase in perennial forage.

The 1970-71 Canadian Dairy Commission policy, announced in March, was designed naintain net returns for dairy farmers while discouraging surplus production of dairy ducts. The holdback against surplus production rose from 52 cents to $1.25 per hundred nds, effective Apr. 1, 1970. The subsidy for quota milk remained at $1.25 per hundred- ght with a 26-cent holdback.

Canada pledged $30,000,000 worth of Canadian food aid and cash for the 1971-72 od at the World Food Program's annual pledging conference. Canada is the second est contributor, having pledged a total of about $100,000,000 in food and cash since the P was launched in 1963.

The new maximum security livestock quarantine station at St. Pierre was officially ned in April by representatives of the French Ministry of Agriculture and the Canada artment of Agriculture. The station was built and is being maintained by France the CDA in charge of health aspects, including quarantine regulations and tests. e 200 cattle from France and Switzerland were released from the station on opening

In May, restrictions on the sale of 2,4,5-T weed killer were announced. Public sale prohibited and 2,4,5-T use was limited to vegetation and brush control on rights-of- , rangeland and other similar areas not regarded as presenting significant hazards. The rt of the five-man task force on Canadian agriculture, appointed on Sept. 22, 1967, tabled in the House of Commons in May.

In late June, the Canadian Dairy Commission announced a change in the minimum unt of subsidy quota to be allotted to cream shippers not having quotas. This means a farmer buying a complete milking herd from a quota holder who is discontinuing ying, may ask to have the seller's quota transferred to him regardless of its size. To id splitting larger herds for quota reallocation, the previous minimum quota of 1,750 lb. utterfat will continue to apply when non-quota shippers buy only a part of a herd from iota holder.

CDA scientists participated in the transatlantic birth of three healthy pigs. Fertilized s taken from a sow at the Department's Animal Diseases Research Institute at Hull, ., were transplanted to a foster mother at the Central Veterinary Laboratory run by the ish Ministry of Agriculture at Weybridge in England. The piglets were born July 1970.

In early August, the final phasing out of the Federal Government's hog quality premi program was announced. The phase-out program began when the new hog-grading syst was introduced on Dec. 31, 1968.

In September it was announced that the quality premium for lambs would be pha out at the end of 1970, completing a process that began in April 1969.

Operation LIFT, the Wheat Inventory Reduction Program aimed at reducing wh acreages on the Prairies, was termed a great success; wheat production was down 50 from 1969.

A Second Canadian Agricultural Congress was held in Ottawa on Nov. 25–27, examine the federal Task Force Report on Agriculture, attended by more than 500 pers from all areas of Canadian agriculture. Also in November the Agricultural Stabilizat Board announced that there would be no deficiency payment to egg producers under 1969-70 program. The program provided a floor price of 80 p.c. of the base price (10-y average) under the mandatory provisions of the Agricultural Stabilization Act.

All registrations for seed treatment pesticides containing mercury were cancelled of Dec. 1, 1970.

Section 2.—Federal Government in Relation to Agriculture*

The Canada Department of Agriculture dates from Confederation. It was establis in 1867 as an outgrowth of a Bureau of Agriculture set up in 1852 by an Act of the Le lature of the Province of Canada. The Department derives its authority from the Brit North America Act, 1867, which states in part that "in each province, the legislature m make laws in relation to agriculture in the province" and that "the Parliament of Can may from time to time make laws in relation to agriculture in all or any of the provin and any law of the legislature of a province relative to agriculture, shall have effect and for the province as long and as far as it is not repugnant to any Act of the Parliam of Canada".

A Department of Agriculture with a Minister of Agriculture at its head was acc ingly established as part of the Government of Canada. Departments of Agricult headed by provincial Ministers of Agriculture were also set up by the provincial gov ments, except in the Province of Newfoundland where agricultural affairs are dealt w by the Agricultural Division of the Department of Mines, Agriculture and Resour The agricultural affairs of the Yukon and Northwest Territories are administered for Federal Government by the Department of Indian Affairs and Northern Development.

Subsection 1.—Services of the Canada Department of Agriculture

The activities of the Canada Department of Agriculture (CDA) fall into three br groups: research, promotional and regulatory services, and assistance programs. Rese work is aimed at the solution of practical farm problems through the application of fu mental scientific research to all aspects of soil management, agricultural engineering, crop and animal production. Promotional and regulatory services are directed toward control or eradication of crop and livestock pests and the registration of chemicals other materials used to achieve that end, toward the inspection and grading of agricult products, and toward the establishment of sound policies for crop and livestock impr ment. Assistance programs cover some of the sphere of price stability, emergency re crop insurance, compensation, and income security in the event of crop failure.

The Department has five main programs—Administration (including Econom Research, Production and Marketing, Health of Animals, and the Board of Grain Com sioners (see Index)—and its organization includes a number of smaller units—the Agr

* Prepared (June 1970) under the direction of S. B. Williams, Deputy Minister of Agriculture, Ottawa.

al Stabilization Board (p. 557), the Agricultural Products Board, Crop Insurance (p. 8), and Prairie Farm Assistance Administration (p. 562). Agencies closely allied with e Department and responsible to the Minister of Agriculture are the Canadian Dairy mmission (p. 558), the Canadian Livestock Feed Board (p. 563), and the Farm Credit rporation (p. 561).

Research Branch.—The Research Branch is primarily responsible for research on icultural production problems although other phases of research are carried on by the onomics Branch (p. 556), the Health of Animals Branch (p. 555), and the Grain Research boratory of the Board of Grain Commissioners (p. 554). The activities of the Branch carried out at 26 Research Stations, 14 Experimental Farms, eight Research Institutes d three Research Services, and at a number of substations and project farms in all 10 ovinces and in the Yukon and Northwest Territories. The headquarters of the Branch in Ottawa where the Executive provides general direction and co-ordination of the ogram. Approximately 800 professional staff are employed, representing most of the logical and physical sciences that can contribute to the solution of agricultural pro- ction problems.

The total program of the Branch is problem-oriented, with specific objectives and als for the Branch as a whole and relevant objectives and goals for each establishment. ith the increasing complexity of modern agricultural production and the competitive essures that exist, efficiency and reduced cost per unit of production become increasingly portant. Therefore, emphasis in the research program continues to be on development improved varieties of plants and animals, on production practices that will maximize lds and reduce costs, and on methods of controlling insects, diseases and weeds that ver production.

Through the years, the Research Branch plant breeders have produced new varieties cereal, forage and horticultural crops to meet new market requirements and reduce e hazards of production. Thus, the search has continued for even better material to ercome the limiting factors of a northern climate including a short growing season, st hazards, drought, insect pests and diseases. At the same time, efforts have been ade to develop plants that will respond favourably to long days and the high light inten- y of many parts of Canada. As an aid in identifying climatic effects on crops and pro- ding a basis for forecasting possible success with new crops in an area, agrometeorology s become an increasingly important factor. Particular attention has been given in cent years to new crops and outstanding success has been achieved in the development of w varieties of rapeseed with oil quality-tailored to specification. More than 80 new rieties of crops have been developed and put into commercial production in the past 10 ars, including almost all of the cereal crops produced in Western Canada.

Feed grains and forage crops have received particular attention to provide for feeds a basis for economical livestock production. The application of genetics to animal im- ovement and to increasing knowledge of the nutritional requirements of animals have en the two main activities in direct support of improved livestock production. More cently, increasing emphasis has been given to developing procedures for improved re- oductive efficiency of all classes of stock, since low reproductive rate is a seriously limiting ctor. Emphasis is also being given to the disposal of animal wastes, a problem that is creasing in severity with the development of larger livestock concentrations.

The battle to control crop diseases and pests is being fought aggressively. Although emicals have proved to be a potent weapon, their contribution to the total pollution oblem has caused particular concern and methods of biological control are therefore ceiving increased attention. The development of resistant varieties, the use of parasites d predators, and the destruction of insects by non-chemical means are all in the arsenal the research workers. In this, as in most other aspects of agricultural research, the team inter-disciplinary approach is being used more and more.

The CDA Research Branch and the Animal Research Institute have together developed solutions to pollution problems caused by fertilizing fields with manure. One approach is to pump liquid manure from a tanker through hoses directly underground, eliminating all stench.

Increased output per man, in which agriculture has made outstanding advances the past quarter-century, has been made possible through farm mechanization on a la scale. To assist in continuing this advance, the Branch has expanded its agricultu engineering staff to deal with specific problems and to provide for strengthened liais with universities and provincial extension officers. The Branch conducts a continui soil survey in all provinces in co-operation with provincial departments of agriculture a with faculties of agriculture in universities and also conducts an extensive program research on soil fertility and cultural practices, working toward the objective of using t agricultural soils most effectively and of conserving them for the future.

In addition to independent research done by the Branch staff, considerable co-op ative work is undertaken with staff of agricultural faculties and provincial governmen Furthermore, through operating and extramural grants, support is given to resea workers at the universities. Close liaison is maintained with these agencies to av unnecessary duplication of program and special attention is given to maintaining cont with provincial extension officers. Branch establishments across the country are rep sented on provincial committees concerned with making recommendations on crop varieti fertilizers, cultural practices, pest control, animal management, and other problems. Su collaboration ensures that research results of immediate practical value are made availa to extension officers and to producers as quickly as possible.

Grain Research Laboratory.—This Research Laboratory provides scientific servi required in the administration of the Canada Grain Act. It carries out annual studies the quality of the new crop cereals, maintains a continuous check of the quality of cer grains as they move forward from the farm to marketing positions and plays a major r

in testing (prior to licensing) the quality of plant breeders' varieties of various cereals. A comprehensive program of basic and applied research relating to the quality of Canadian cereal grains is an important task of the Laboratory.

Health of Animals Branch.—This Branch administers the Animal Contagious Diseases Act, the Meat Inspection Act and the Humane Slaughter of Food Animals Act, and operates laboratories for the study of animal diseases. Contagious diseases of animals are controlled through preventive measures of inspection and quarantine of imported livestock and restricted commodities such as meat, farm products and other possible

The technique of using aerial photography for the detection and measurement of disease in agricultural areas is under development by federal scientists of the Canada Department of Agriculture, as part of a nation-wide program to estimate disease losses.

A pilot and cameraman prepare to patrol, by light aircraft, an area suspected of being diseased. Photographs taken at daily intervals indicate the spread of disease and its general movement.

Diseased areas of a potato leaf being estimated by computer scanner in the laboratories of the Ottawa Research Station.

sources of infection; through conducting disease eradication programs, notably of bovine tuberculosis, brucellosis and Johne's disease; through the control and eradication of serious animal diseases when outbreaks occur; and through inspection and certification as to health of livestock for export.

The Animal Pathology Division consists of the Animal Diseases Research Institute at Hull, Que., the Animal Diseases Research Institute (Western) at Lethbridge, Alta., and seven other laboratories; these establishments conduct research and investigations on diseases of animals and produce the biological products required in the control programs of the Branch. The Division also provides diagnostic services for diseases of domestic and wild animals; provides a consultation service regarding veterinary biologics and other agents used in the control of animal diseases; and assists in training departmental officers and technicians as well as veterinarians from other lands. The Meat Inspection Division conducts ante-mortem examinations; ensures the application of strict humane slaughter regulations for all food animals; conducts continuous post-mortem examinations of animals slaughtered at packing plants in which they operate; and ensures maintenance of sanitary standards during processing of the products, accurate labelling, and the proper kind and use of ingredients and preservatives—all in an effort to guarantee the marketing of wholesome unadulterated meats and meat food products.

Economics Branch.—The Economics Branch advises the Minister and the Department of Agriculture on the economic implications of proposed and existing policies and programs; and conducts research on the economics of production, processing, marketing and resource use of agriculture, as a basis for policy advice and establishment of guidelines for development and adjustment within agriculture. It develops and interprets market outlook information on short-term, intermediate and long-term supply and demand trends, prospects and composition; and evaluates these prospects internationally, nationally and regionally to assist Canadian agriculture in adjusting to change and meeting market requirements. The Branch is divided into three Divisions—Research, Farm Management and Marketing and Trade—and includes an economic planning secretariat. Regional offices are located in the Maritimes, the Prairie Provinces and British Columbia.

Production and Marketing Branch.—The Production and Marketing Branch conducts many of the promotional and regulatory functions of the Department. Six specialized divisions administer legislation and policies in the production and marketing of livestock, poultry, fruits and vegetables, dairy products and plant products, and policies in connection with the control of disease in plants.

The *Livestock Division* administers legislation dealing with the grading of meat, wool and fur, with the registration of livestock pedigrees, with performance testing of cattle and hogs and with the supervision of racetrack betting. Other activities include the promotion of livestock improvement and the compilation of market statistics. The *Poultry Division* carries out the policies of the national poultry breeding program, including Record of Performance for poultry and hatchery inspection, and administers the regulations for the grading of poultry products. The *Fruit and Vegetable Division* administers legislation having to do with the grading of fruits and vegetables in both fresh and processed form, maple products and honey. The Division is responsible for the licensing of interprovincial and international dealers and brokers who deal in fresh fruits and vegetables. The *Dairy Division* administers legislation covering grades and standards for dairy products including butter, cheese, concentrated milk products and ice cream. The *Plant Products Division* administers Acts and regulations respecting seeds, feeds, fertilizers and pest control products, conducts field inspections and maintains regional testing laboratories. The *Plant Protection Division* is responsible, under the Destructive Insect and Pest Act, for safeguarding against the introduction of serious plant insects or diseases into Canada or their spread in Canada, for certifying freedom from disease and pests in plant exports, and for seed potato certification.

Administration and Information.—The Financial and Administration Branch rovides central advisory and specialized staff services for the financial and business mangement of the Department and advises the Senior Executive in developing financial and dministrative policies and programs. Personnel policies and programs for approximately 0,000 employees of the Department, including scientific and professional groups, technical, dministrative and other support staff at various locations across Canada, are conducted y the Personnel Administration Branch.

The Information Division gathers and disseminates information on the research, evelopment and regulatory work of the Department, giving service to the news media, agricultural extension workers and directly to the public through publications, press nd radio releases, television material, motion pictures and exhibits.

Subsection 2.—Farm Assistance Programs

Basic to the concept of Canada's national agricultural policy is the premise that a able agriculture is in the interests of the national economy and that farmers as a group re entitled to a fair share of the national income. In pursuit of these objectives, the epartment of Agriculture has carried on, over a long period, programs designed to aid griculture through the application of scientific research and the encouragement of improved ethods of production and marketing. Over the years, as conditions have warranted, rograms have been initiated to deal with special situations such as the Prairie Farm ssistance Act (p. 562) to mitigate the effects of crop failure, Feed Grain Assistance Regutions (p. 563) to assist in the movement of western feed grains to Eastern Canada and ritish Columbia, and other programs recently transferred to the new Department of egional Economic Expansion—the Maritime Marshland Rehabilitation Act to save aluable soil in the Maritime Provinces, and the Prairie Farm Rehabilitation Act (p. 543), rimarily concerned with combating drought in the agricultural areas of the Prairie Provces.

Although much has been accomplished and is still being accomplished by these meaures, changes in the past two decades have dictated the need for a different approach to me problems. Large-scale mechanization and, in some segments of the industry, autonation reduced manpower requirements very significantly; the number of farms declined ut the size of farms increased; marketing and income problems took different forms; and decline in some rural communities occurred together with problems of increasing regional isparity. Legislation enacted to meet these situations includes price support (Agricultural tabilization Act), dairy market and producer income stabilization (Canadian Dairy ommission), crop insurance (Crop Insurance Act), Agricultural and Rural Development ct (ARDA) and Fund for Rural Economic Development (FRED), feed grain assistance Livestock Feed Assistance Act) and credit facilities (Farm Improvement Loans Act, arm Credit Act and Farm Syndicates Credit Act). These measures, with the exception f the ARDA and FRED programs (see Chap. XXIV, Sect. 6, Subsect. 2) are administered y the Department of Agriculture.

Agricultural Stabilization Act.—The Agricultural Stabilization Act (SC 1958, c. 22, roclaimed Mar. 3, 1958) established the Agricultural Stabilization Board and repealed he Agricultural Prices Support Act, 1944. The Board is empowered to stabilize the rices of agricultural products in order to assist the agricultural industry in realizing ir returns for labour and investment, and to maintain a fair relationship between prices eceived by farmers and the costs of goods and services that they buy.

The Act provides that, for each production year, the Board must support, at not less han 80 p.c. of the previous 10-year average market or base price, the prices of nine comodities (cattle, hogs and sheep; butter, cheese and eggs; and wheat, oats and barley roduced outside the prairie areas as defined in the Canadian Wheat Board Act). Other ommodities may be supported at such percentage of the base price as may be approved by

the Governor in Council. Since the Act came into force, the following farm products other than the nine named commodities, have been supported at one time or another: honey, potatoes, soybeans, sunflower seeds, sugar beets, tobacco, turkeys, apples, peaches, sour cherries, apricots, raspberries, asparagus, tomatoes, milk for manufacturing and skim milk powder. The Board may stabilize the price of any product by an offer-to-purchase, by a deficiency payment, or by making such payment for the benefit of producers as may be authorized.

In stabilizing prices of certain commodities by means of deficiency payments, the price stabilization program has been assisting the agricultural industry to make production adjustments from a position of excessive supply to one of more normal relationship between supply and demand. The institution of limited deficiency payments by the Board assists in the adjustment of production in a relatively short time. During the period of adjustment, the Board guarantees a minimum average return to producers for a limited quantity of product.

The cost of stabilization programs under the Act has averaged approximately $74,000,000 a year. The Board has available a revolving fund of $250,000,000, according to the Act. Losses incurred are made up by Parliamentary appropriations and any surplus is paid back to the Consolidated Revenue Fund. An Advisory Committee named by the Minister of Agriculture and composed of farmers or representatives of farm organizations assists the Board in its operations.

Canadian Dairy Commission Act.—The Canadian Dairy Commission was established by the Canadian Dairy Commission Act, 1966, and became operative on Apr. 1, 1967. The affairs of the Commission are directed by three Commissioners, and its objects are "to provide efficient producers of milk and cream with the opportunity of obtaining a fair return for their labour and investment and to provide consumers of dairy products with a continuous and adequate supply of dairy products of high quality".

To perform its functions, the Commission is authorized to stabilize prices of major dairy products through offers to purchase at fixed prices, thus establishing stable prices in the interests of both producers and consumers. The Commission may borrow from the Minister of Finance the funds required for such purchases to a maximum of $100,000,000 which must be repaid.

The Commission administers the payment of funds provided by the Government for subsidies to producers of milk and cream used in the production of dairy products. These payments supplement returns to producers from the market and permit market prices to be kept at reasonable levels. The total quantity of milk and cream on which subsidy is paid is restricted to the volume required to serve the Canadian domestic market. Each producer is given a quota for the amount for which he is eligible for subsidy. The Commission, indirectly, pools returns to producers from products sold on the domestic and export markets through an export equalization fund. Money for this is deducted from the subsidy and payments are made to equalize export prices with domestic prices for any surplus products that must be exported.

The Commission also has authority, under regulation by the Governor in Council, to exercise control of the interprovincial and export movement of dairy products, and to perform other functions related to its responsibilities.

Crop Insurance Act.—To assist in making the benefits of insurance protection on crops available in all provinces, the Crop Insurance Act was passed in 1959. This Act does not set up any specific insurance scheme but rather permits the Federal Government to assist the provinces to do so by making direct contributions toward the cost of providing crop insurance. The initiative for establishing schemes to meet their own regional requirements rests with the provinces. Schemes may be organized on the basis of specific crops or areas within the provinces and agreements between the provinces and the Federal Government set out the terms of insurance coverage.

Under the Act and amendments of 1964 and 1966, the Federal Government will pay) p.c. of the administrative costs incurred by a province and 25 p.c. of the amount of remiums required to make the scheme actuarially sound. In addition, the Federal overnment may make loans to any province equal to 75 p.c. of the amount by which demnities required to be paid under policies of insurance exceed the aggregate of the remium receipts for that year, the reserve for the payment of indemnities, and $200,000. s an alternative to such loans, the Federal Government may re-insure a major portion the provincial risk in a program operated under the Crop Insurance Act. Farmers sured under the Act are not eligible for payments under the Prairie Farm Assistance Act, r are they required to pay the 1-p.c. levy on grain sales as provided for under that Act.

In the year ended Mar. 31, 1969, 62,359 farmers purchased $162,936,000 worth of surance coverage for their crops under 68 different crop insurance plans. Premiums harged totalled $11,903,000 (including the federal share) and indemnities paid out ap- oached $18,200,000 as compared with $13,100,000 in 1968. The relatively high indem- ties paid to farmers were due to high losses in certain areas and localities rather than a neral crop loss situation. In the Fraser and Okanagan Valleys of British Columbia, ld weather in December 1968 and January 1969 caused considerable damage to straw- rry plants, fruit trees, and the potential fruit crop. Excessive wet weather during the ll season in central and northern Alberta resulted in most of the cereal crops being left harvested before snowfall. Some of these crops were a complete loss and others har- sted in the spring of 1970 were low in grade and yield. Excessive moisture in the spring d summer months caused crop losses in southeastern Manitoba and southwestern Ontario d made harvesting of forage crops difficult in Quebec. Although these adverse conditions used most of the losses, many farmers also experienced lost production from drought, ll frost, spring frost, virus disease and wind damage.

Farm Improvement Loans Act.—The Farm Improvement Loans Act (RSC 1952, 110), administered by the Department of Finance, is designed to facilitate the availability credit by way of loans made by the chartered banks to assist in almost every conceivable rchase or project for the improvement or development of a farm and includes the pur- ase of agricultural implements, the purchase of livestock, the purchase and installation agricultural equipment or a farm electrical system, the erection or construction of fencing works for drainage on a farm, and the construction, repair or alteration of farm buildings cluding the family dwelling, and the purchase of additional land for the purpose of farming. redit is provided on security related to the purchase or project and on terms suited to the dividual borrower.

The legislation, originally operative for three years (1945-48), has been continuous way of extensions, usually for three-year periods. The latest extension was for the riod July 1, 1968 to June 30, 1971. The maximum repayment period for land purchase 15 years and for all other purposes 10 years. The interest rate is prescribed in the gulations and is adjustable semi-annually on Apr. 1 and Oct. 1 of each year to reflect anges in the levels of interest rates generally. The borrower is required to provide m 10 p.c. to 33⅓ p.c. of the cost of his purchase or project, depending on the loan category which it belongs. The Federal Government guarantees each bank against loss sustained it up to an amount equal to 10 p.c. of loans granted by it in a lending period. This arantee does not apply to any loan made after the aggregate of all loans made by all nks in a given period reaches an amount fixed by statute. The current maximum stands $900,000,000 which may be lent by the chartered banks and a limit of $300,000,000 hich may be lent by other designated lenders. By Dec. 31, 1969, 3,886 claims amounting $3,267,382 had been paid under the guarantee since the inception of the Act, representing net loss ratio of less than one tenth of 1 p.c. after recoveries have been taken into account. he maximum loan or amount that may be outstanding to a borrower at any one time ands at $25,000.

1.—Loans Made and Repayments under the Farm Improvement Loans Act, 1945-69

Period	Loans Made	Repayments[1]	Balance Outstanding
	$	$	$
Mar. 1, 1945 to Feb. 28, 1948	33,605,576	33,605,576	—
Mar. 1, 1948 to Feb. 28, 1951	142,372,774	142,372,774	—
Mar. 1, 1951 to Mar. 31, 1953	190,449,006	190,446,627	2,379
Apr. 1, 1953 to Mar. 31, 1956	222,723,494	222,717,645	5,849
Apr. 1, 1956 to Mar. 31, 1959	239,064,072	239,010,389	53,683
Apr. 1, 1959 to June 30, 1962	346,906,122	346,028,506	877,616
July 1, 1962 to June 30, 1965	447,767,384	435,537,551	12,229,833
July 1, 1965 to June 30, 1968	553,823,636	399,791,894	154,031,742
July 1, 1968 to June 30, 1971 (as of Dec. 31, 1969)	151,566,146	12,661,514	138,904,632
Totals	**2,328,278,210**	**2,022,172,476**	**306,105,734**

[1] Includes principal amount of claims paid under government guarantee.

2.—Loans Made under the Farm Improvement Loans Act, by Purpose and Province, 1968 and 1969, with Cumulative Totals from 1945

Purpose and Province	1968		1969		Cumulative Totals 1945-69	
	Loans	Amount	Loans	Amount	Loans	Amount
	No.	$	No.	$	No.	$
Purpose						
Purchase of agricultural implements	9,484	26,972,601	32,090	92,984,086	1,182,062	1,823,095,4
Construction, repair or alterations of, or making additions to any building or structure on a farm	1,697	6,455,401	5,750	22,721,204	116,453	264,272,9
Purchase of livestock	1,390	3,471,964	5,172	14,213,758	116,655	163,944,7
Other improvements	1,633	3,343,901	3,879	12,137,434	65,018	76,965,0
Totals	**14,204**	**40,243,867**	**46,891**	**142,056,482**	**1,480,188**	**2,328,278,2**
Province						
Newfoundland	1	1,200	7	28,750	639	1,026,4
Prince Edward Island	399	923,035	750	1,903,969	21,693	28,175,2
Nova Scotia	306	697,576	424	1,111,787	14,593	18,528,8
New Brunswick	181	466,985	223	610,538	12,297	17,891,5
Quebec	167	631,069	472	2,184,024	113,987	157,564,0
Ontario	3,345	10,204,244	9,461	31,243,159	252,102	428,981,4
Manitoba	1,082	3,215,295	5,103	15,343,328	178,609	271,918,9
Saskatchewan	3,044	8,234,175	12,661	36,236,406	425,728	669,376,6
Alberta	4,645	12,686,311	15,864	46,444,219	416,354	656,191,0
British Columbia	1,034	3,183,977	1,926	6,950,302	44,186	78,624,0

Prairie Grain Advance Payments Act.—This Act, which came into force on No 25, 1957, and was subsequently amended in August 1958 and November 1968, provic for interest-free advance payments to producers in Western Canada for farm-stored thresh grain (wheat, oats and barley). Advance payments of $1 per bushel of wheat, 40 cer

r bushel of oats and 70 cents per bushel of barley are made subject to certain restrictions to quota and acreage. The total of advances obtained in any crop year may not exceed ,000. Repayment is effected by deducting 50 p.c. of the initial payment for wheat, oats d barley delivered subsequent to the loan until the producer has discharged his advance.

3.—Applications, Advances and Refunds under the Prairie Grain Advance Payments Act, Years Ended July 31, 1961-70

Year Ended July 31—	Applications	Total Advance	Average Advance	Total Refunded	Percentage Refunded
	No.	$	$	$	
1	76,089	63,912,550	840	63,900,682	99.9
2	22,342	16,656,713	746	16,644,365	99.9
3	39,683	29,251,526	737	29,236,449	99.9
4	63,427	62,136,418	980	62,100,703	99.9
5	38,375	32,961,844	859	32,913,014	99.9
6	43,509	40,600,386	933	40,470,289	99.7
7	36,953	36,668,270	992	35,242,003	96.1
8	45,811	47,280,738	1,032	45,457,285	96.1
9	113,491	151,852,319	1,338	99,436,490	65.5
0p	122,110	272,777,141	2,234	134,497,116	49.3

Farm Credit Act.—The Farm Credit Act (SC 1959, c. 43, proclaimed on Oct. 5, 59) established the Farm Credit Corporation as successor to the Canadian Farm Loan ard established in 1929. The Corporation, which is a Crown agency, reports to Parliaent through the Minister of Agriculture.

The Act provides two types of long-term mortgage loans for farmers. Under Part II e Corporation may lend up to 75 p.c. of the appraised value of the farm land and buildings ken as security, not exceeding $40,000 for one, $80,000 for two or $100,000 for three or re owner-operators principally occupied in a single farming business. Under Part III ns may be made up to 75 p.c. of the appraised value of the land and chattels, not exeding $55,000 for one or $100,000 for two or more qualified owner-operators in a single m business. Special provision is made under this Part for loans up to 90 p.c. of farm ets where the owner-operator is under age 35 and the management of the farm is conerably above average. Part III loans are further secured by insurance on the life of the rrower, and his farming operations are subject to supervision by the Corporation. nilar life insurance and supervision are available to Part II borrowers on an optional sis.

Under both Parts, applicants must be at least 21 years of age and principally occupied farming. Individual borrowers under Part III must be between 21 and 45. To qualify more than $55,000 under Part III, there must be at least two owner-operators under or one under 35. All loans are repayable on an amortized basis within a period not eeding 30 years. The interest rate is set by Order in Council and varies with the t of money to the Corporation.

The Corporation has 122 field offices administered by 253 credit advisers who are ponsible for informing local farmers about the services available, for pre-loan counselling credit use, farm planning and farm management, for accepting applications and for king farm appraisals.

In addition to the amounts repaid by borrowers, funds for lending to farmers may be rowed by the Corporation from the Minister of Finance. The aggregate amount of h borrowings outstanding at any time may not exceed 25 times the capital of the Coration. This capital was raised by amendment to the Act in 1968 from $40,000,000 to ,000,000. There were 68,496 loans to the amount of $1,111,520,366 outstanding as of r. 31, 1970.

4.—Loans Approved and Disbursed under the Farm Credit Act, Years Ended Mar. 31, 1961-

Year Ended Mar. 31—	Loans Approved		Loans Paid Out	Year Ended Mar. 31—	Loans Approved		Loans Paid Ou
	No.	$	$		No.	$	$
1961	5,597	60,704,050	52,305,265	1966	11,238	208,984,900	201,687,6
1962	5,885	68,574,850	68,886,875	1967	12,167	247,947,500	234,447,2
1963	7,438	90,924,300	78,428,094	1968	11,954	263,236,500	251,228,0
1964	8,689	108,009,100	96,315,635	1969	9,159	208,330,500	205,341,8
1965	10,142	154,813,900	139,750,639	1970	5,829	160,466,000	158,017,9

5.—Loans Approved under the Farm Credit Act, by Province, Years Ended Mar. 31, 1968-

Province	1968		1969		1970	
	No.	$	No.	$	No.	$
Newfoundland	9	167,900	13	432,500	6	173,3
Prince Edward Island	120	2,287,100	112	2,612,200	67	2,148,4
Nova Scotia	39	770,100	56	1,293,900	20	703,0
New Brunswick	144	2,660,500	94	2,216,500	73	1,761,4
Quebec	1,406	25,668,800	1,194	23,201,200	715	16,149,4
Ontario	2,012	43,956,600	1,488	35,159,200	1,116	32,612,8
Manitoba	1,211	27,933,300	935	21,098,600	604	17,295,9
Saskatchewan	3,665	80,618,600	2,853	64,364,300	1,488	38,602,3
Alberta	2,829	65,556,200	2,055	48,178,200	1,492	42,767,7
British Columbia	519	13,617,400	359	9,773,900	248	8,251,8
Totals	**11,954**	**263,236,500**	**9,159**	**208,330,500**	**5,829**	**160,466,0**

Farm Syndicates Credit Act.—The Farm Syndicates Credit Act (SC 1964, c. 2 as amended by SC 1968-69, c. 32) authorizes the Farm Credit Corporation to lend to qua fied groups of farmers (referred to as syndicates). A syndicate is a group of three or m farmers, the majority of whom have farming as their principal occupation, who have sign an agreement acceptable to the Corporation with respect to the joint purchase and u of machinery, equipment or buildings which can be used profitably by them in their farmi operations. Co-operative farm associations and certain farming corporations may qual as syndicates for loans without the members entering into a formal agreement.

A syndicate may borrow up to 80 p.c. of the cost of machinery, buildings (includ site and other improvements) and installed equipment suitable for joint use, to a maxim of $15,000 per member or $100,000, whichever is the lesser. Loans are repayable ove period not exceeding 15 years for buildings and installed equipment, and seven years mobile machinery. The interest rate is based on the cost of funds to the Corporati advanced by the Minister of Finance, and its expenses in servicing loans. There is initial charge of 1 p.c. on the amount of each loan. Security is provided by a promiss note signed by each syndicate member, and such other security as may be required. Up Mar. 31, 1970, the Corporation had approved loans for 582 syndicates totalling $7,500,0

Prairie Farm Assistance Act.—The Prairie Farm Assistance Act, passed in 19 provides for direct money payments by the Federal Government on an acreage-and-yi basis to farmers in areas of low crop yield in the Prairie Provinces and in the Peace Ri area of British Columbia. Its purpose is to assist in dealing with a relief problem wh the provinces and municipalities cannot do alone and to enable the farmers to put in a c the following year. Payments for the 1969-70 crop year, as at July 31, 1970, total $5,230,281; payments made under the Act since 1939 amounted to $383,516,518.

Payments are made from the Prairie Farm Emergency Fund to which farmers cont ute 1 p.c. of the value of all sales of wheat, oats, barley, rye, flaxseed and rapeseed. T

ditional funds required are provided from the federal treasury. The total collected rough the 1-p.c. levy in the 1969-70 crop year, as at July 31, 1970, was $5,451,832; the nount collected since 1939 was $207,378,387.

Farmers operating land in the spring wheat area, and not covered by a federal-provin-l crop insurance scheme, are eligible for awards. Crop failure and natural causes eventing seeding and summerfallowing are taken into account in making awards. These y not exceed $800 in respect of any one farmer's total cultivated acreage.

The PFAA administered the Operation LIFT program in 1970. This program offered reage payments to farmers who reduced wheat and increased summerfallow acreage and s introduced by the Federal Government to alleviate problems arising from the huge eat surplus. Payments to farmers as of Dec. 17, 1970, amounted to $47,499,454.

Livestock Feed Assistance Act.—The Livestock Feed Assistance Act (SC 1966, 52) established the Canadian Livestock Feed Board, which is a Crown agency reporting Parliament through the Minister of Agriculture. The Board has four main objects which to ensure: (1) the availability of feed grain to meet the needs of livestock feeders; (2) availability of adequate storage space in Eastern Canada for feed grain to meet the eds of livestock feeders; (3) reasonable stability in the price of feed grain in Eastern nada and in British Columbia; and (4) fair equalization of feed grain prices in Eastern nada and in British Columbia.

In furtherance of these objectives, the Board may make payments related to the cost feed grain storage and transportation. Feed grain transportation assistance payments ve been made since 1941, and since April 1967 have been made under the authority of Livestock Feed Assistance Act. Under the Feed Grain Assistance Regulations of the propriations Act, the original policy was initiated in October 1941 to provide a market western feed grains, and to enable livestock feeders in Eastern Canada and British lumbia to obtain supplies of feed grains at a cost that would maintain livestock and ultry production at a high level. This program has been modified over the years to courage better utilization of both transport and storage facilities.

6.—Freight-Assisted Shipments of Feed Grains, by Province of Destination, Years Ended Mar. 31, 1969 and 1970

Year and Province	Western Wheat and Sample Feed Grain	Oats	Barley	Rye	Screenings	Millfeeds	Eastern Corn and Wheat	Total Shipments	Expenditure
	tons	tons	tons	tons	tons	tons	tons	tons	$
1969									
d.....	1,576	2,522	4,739	1,047	1,581	9,160	6,517	27,141	488,688
I.....	2,855	2,175	10,579	415	456	8,741	4,287	29,509	430,734
.....	23,361	15,010	32,252	2,051	3,812	36,523	38,661	151,671	1,622,498
.....	5,962	11,107	18,700	1,772	2,595	28,853	21,037	90,027	1,167,598
.....	125,069	252,723	395,195	9,321	14,905	243,184	8,358	1,048,754	8,425,816
.....	38,339	132,477	183,533	6,455	40,612	151,719	—	553,135	2,937,808
.....	63,151	39,969	116,641	—	2,699	31,194	580	254,234	2,561,862
otals, 1969...	**260,313**	**455,983**	**761,639**	**21,061**	**66,660**	**509,374**	**79,440**	**2,154,471**	**17,635,004**
1970									
d.....	13,950	3,624	10,426	195	281	3,526	3,321	35,323	634,119
I.....	5,295	1,724	10,506	236	339	6,594	1,740	26,434	347,893
.....	57,729	19,334	54,458	833	1,198	23,095	15,146	171,793	1,782,344
.....	29,249	15,095	40,044	345	497	17,789	7,890	110,909	1,345,105
.....	257,163	247,249	516,381	1,032	16,717	230,839	2,829	1,272,210	9,438,200
.....	208,099	144,271	379,234	532	42,667	181,572	- -	956,375	4,857,858
.....	109,778	48,790	141,752	1,120	8,669	47,265	2,422	359,796	3,438,410
otals, 1970...	**681,263**	**480,087**	**1,153,801**	**4,293**	**70,368**	**510,680**	**33,348**[1]	**2,932,840**	**21,843,929**

[1] Includes corn of Manitoba origin shipped into British Columbia.

Section 3.—Provincial Governments in Relation to Agriculture*

Subsection 1.—Agricultural Services

Newfoundland.—Government agricultural services in Newfoundland are operat by the Agricultural Division of the Department of Mines, Agriculture and Resourc The Division consists of a director and a staff of 64 officers under the administration of t Deputy Minister of Agriculture and Co-operatives. For purposes of administration, t province is divided into nine districts in each of which is located a fieldman with permane headquarters. Officers in charge of different phases of agricultural development visit ea district on assignments from the St. John's office.

Departmental policies in support of the agricultural industry include: a bonus of $1 an acre on land cleared by privately owned equipment; the distribution of ground limesto at a subsidized rate; the payment of bonuses on purebred sires; and financial assistance agricultural societies, marketing organizations and exhibition committees. An inspecti service is provided for poultry products, vegetables and blueberries, production of the lat being encouraged by the burning of suitable berry areas and the improvement of roads a trails leading to them.

Every encouragement is given to the production of livestock. Favourable marketi conditions and departmental assistance and loans under the Provincial Farm Developme Loan Act and the Newfoundland Farm Products Corporation Act have contributed increased output of poultry products and pork. The Provincial Veterinarian and his st supervise the health of animals program and the federal-provincial project for the eradi tion of bovine tuberculosis and brucellosis.

Prince Edward Island.—The Prince Edward Island Department of Agriculture composed of the following Branches and Divisions. The Extension Services Branch de with rural extension education generally, through its three Divisions: the Agricultu Economics and Statistics Division; the Agricultural Representative Division which h five district offices, each with an agricultural representative, a home economist and a fa management specialist; and a Women and Youth Division, which includes an Informati Section. The Production Sciences Branch supervises the regulatory function of the Depa ment and assists with agricultural extension programs. It has three Divisions: the Sc and Water Division, the Production Science Division and the Veterinary and Dairy Servic

The Department of Agriculture is also responsible for the forestry program in t province, which function comprises a third Branch of the Department; it is described Chapter XII under "Provincial Forestry Programs".

Nova Scotia.—The Department of Agriculture and Marketing endeavours to "h the people to help themselves" through strengthening member interest in such organi tions as the Nova Scotia Federation of Agriculture, the Nova Scotia Fruit Growers' Asso tion, various agricultural co-operative organizations, credit unions and producer a marketing organizations.

New Brunswick.—Provincial government agricultural policy and programs in N Brunswick are administered and directed by the Department of Agriculture and Ru Development. Under the Minister of Agriculture and Rural Development, the Dep ment is administered by a deputy minister, an assistant deputy minister and the direct of Branches concerned with: extension, livestock and dairying, veterinary services, poult plant industry, agricultural engineering, home economics, credit unions and co-operativ agricultural education and rural development. The Department also has a Farm E nomics Division and an Information Division, as well as a Farm Adjustment Board an Dairy Products Commission.

* Prepared by the agricultural officials of the respective provincial governments.

Quebec.—Agricultural policies of the Quebec Government, as applied by the Department of Agriculture and Colonization, are based on one overriding and clearly defined objective—to make agriculture profitable and bring it into line with the social and economic needs of the 1970s.

Its prime target is, therefore, a systematic modernization of farms. Government, in co-operation with agricultural and related associations, is trying to increase and improve production. It is also attempting to guide agriculture along truly professional lines, through conversion of production techniques to meet local needs and skills, through sound land-use development policies, and through adult education and practical management training in agricultural study groups.

To carry out this objective, the Quebec Department of Agriculture is divided into two main Branches—services connected with direct action on the part of the farmer himself, and departmental services directly related thereto, e.g., the regional agricultural offices and laboratories, and personnel and administrative services.

Under the direction of the Minister, Deputy Minister and three Assistant Deputy Ministers, these Branches work in co-operation with the scientific and technical services which function not only as a support group, but also contribute to their general orientation.

The Regional Offices and Laboratories Branch is responsible for counselling as well as for improving and increasing production, along well-considered lines. It is particularly concerned with farm reorganization through regrouping and developing up-to-date and viable units. It exercises a direct influence on farmers through its 12 well-organized regional administrative offices and laboratories.

The Personnel and Administration Branch supplies the manpower, co-ordinating labour relations, staff training and employee services and organizing promotional competitions through the Civil Service system. It also co-ordinates the work of various administrative branches of the Department and, in co-operation with the Accounting Branch, prepares part of the estimates. It also looks after the internal and external needs of the Department as regards supplies and equipment.

Each of these two main Branches operates in a specific field requiring the co-operation of other departmental services such as Legal, Accounting, Grants and Incentives, Agricultural Water Supplies, and Storage and Equipment on the administrative side, and Veterinary Services, Artificial Insemination and Herd Improvement, Farm Organization, Economics, Marketing, Education and Research, and Information services on the regional offices and laboratories side. Each of these Branches therefore plays an important role in the efficient operation of the Department and contributes to its effectiveness in direct action in the field.

The entire departmental structure is rounded out with the Agricultural Marketing Board, Farm Credit Bureau, and Crop Insurance Board, which implement legislation for both the farmer and the consumer. A Crown corporation, the St. Hilaire Sugar Refinery, completes the organization. It promotes the growing of sugar beets in part of the green belt around Montreal.

Ontario.—The Ontario Department of Agriculture and Food conducts a wide variety of programs to develop a sound agricultural industry and to help farmers. Most assistance is through self-help programs which benefit the individual farmer. The Department administers 47 separate legislative Acts, some of which are regulatory on an industry-wide basis.

Through the Agricultural Rehabilitation and Development Branch (ARDA) the province shares equally with the Federal Government the cost of rural development. In Ontario, ARDA is heavily committed to farm enlargement and consolidation, capital grants for farm development, retraining and research programs, development of community pastures where farmers rent pasture at cost, and soil, water and forest conservation projects.

Agricultural Manpower Services assists in recruiting, moving and placing farm work during the planting and harvesting seasons. This service operates under the Provinc Agricultural Manpower Agreement negotiated each year by the Federal Government a the provincial governments.

The Co-operative Loans Board makes loans to agricultural co-operative associati for the construction of cold storages, feed mills, processing plants, grain elevators, pot storages, dairies, creameries and cheese factories.

The Crop Insurance Commission of Ontario, a Branch of the Department, provi insurance against weather, insect and disease damage to winter wheat, spring grain, for crops, grain corn, soybeans and white beans. Premium rates are subsidized 25 p.c. by Federal Government and 5 p.c. by the Ontario Government.

The Soils and Crops Branch conducts programs of applied research to provide farm with specific recommendations for their areas. Soils and crops specialists frequently w with local branches of the Ontario Soil and Crop Improvement Association to relay information to the farmers. The specialists also supervise the county weed inspec who enforce the Weed Control Act.

The programs of the Veterinary Services Branch fall into the categories of service regulation. Services include administration of a mastitis control program, a certified h policy for swine and veterinary assistance for designated areas (mostly in the north districts); the Regulatory Division administers the Meat Inspection Act, the Brucell Act 1965, the Animal Contagious Diseases Act, the Livestock Community Sales Act, Dead Animal Disposal Act, the Rabies Indemnification program, the Mastitis Con program and the Animals for Research Act. The Branch provides diagnostic services livestock and poultry producers at five regional laboratories.

The Live Stock Branch supervises numerous livestock improvement programs administers the Warble Fly Control Act, the Artificial Insemination Act, the Dog Tax Live Stock and Poultry Protection Act, and the Hunter Damage Compensation Livestock improvement programs include dairy herd improvement; beef cattle perform testing; quality meat sire policy; bull, boar and ram premium policies; production tes in sheep and the federal-provincial sheep transportation assistance policy; and north Ontario livestock assistance. The Branch sponsors and endorses the Ontario Beef Ca Improvement Association and the county and district associations, makes grants avail to regional livestock clubs that hold sales of good quality breeding stock, and spon exhibits of livestock outside the province.

The Ontario Stock Yards Board, which operates under the Federal Livestock Livestock Products Act, was established to provide a marketing service for Ontario l stock producers and to protect their bargaining power.

The Ontario Milk Commission, a Branch of the Department, is responsible for d programs. Under the Milk Act, 1965 and through the Ontario Milk Marketing Board the Ontario Cream Producers' Marketing Board, the Commission is responsible fo producer marketing of milk and cream in the province. The Ontario Milk Marke Board directs milk from farm to plant and establishes prices. The Commission admini the Farm Products Payments Act, 1967, the Oleomargarine Act, and the Edible Oil Prod Act. It also carries out the milk quality program, audits plant records, supervises fluid milk, milk products and central milk testing programs. The Infra Red Milk Anal (IRMA) is the only recognized method for determining milk fat content in Ontario. Commission licenses processors and distributors, carries on extension work with produ operates milk-testing laboratories for the purpose of calculating producer returns, cer butter and cheese makers, graders and testers, and does inspection work on farm and in p

The Farm Products Inspection Branch promotes improved methods of disease con grading, packaging, marketing, handling, storing and transporting Ontario farm prod This is provided for under the Farm Products Grades and Sales Act and Regulations the Plant Diseases Act.

Under the Ontario Farm Products Marketing Board, a Branch of the Department of griculture and Food, 19 producer boards market 37 commodities with a total market value approximately $500,000,000 annually.

The Ontario Food Council Branch of the Department has the broad responsibility of nding methods to better co-ordinate marketing of Ontario farm products in Ontario, other anadian provinces and abroad. The Council includes representatives of producers, rocessors, wholesalers, distributors and consumers. Market development, import replace- ent, and expanding food information and consumer affairs services are major areas of the ouncil's work. The Ontario Food Terminal, operating under the Ontario Food Terminal ct, offers farmers the services of one of the largest volume wholesale fruit and vegetable arkets in Canada.

Research and education are administered by the Education and Research Division the Department. Under the Division, the Agricultural Research Institute of Ontario commends and co-ordinates research for the betterment of agriculture, veterinary medicine nd household science, undertakes continuous research on crops, livestock and farming ractices, and administers a number of services. Horticultural research is co-ordinated the Horticultural Research Institute of Ontario, which also operates under the Education nd Research Division. Fruit and vegetable product development research, and fruit nd vegetable variety research are the chief functions of the Institute. The Provincial esticide Residue Testing Laboratory tests samples of animal, vegetable and mineral igin for herbicides, fungicides and insecticides. The Laboratory continually tests milk llected from Ontario farms for pesticide residues. The Division is also responsible for re diploma-course programs at the Ontario Agricultural College at the University of uelph, and at the Colleges of Agricultural Technology at Centralia, Kemptville, New skeard and Ridgetown.

The Provincial Entomologist reports on insect control programs, as provided under e Plant Diseases and Abandoned Orchards Act, to determine pest control recommenda- ons for Ontario crops. The Provincial Apiarist is responsible for reporting on the bee and ney industry.

There are 54 county and district Extension Branch offices to serve Ontario farmers. nese are staffed by agricultural representatives who relay information about agricultural search developments directly to farmers. In addition, specialists on farm management d engineering are located strategically throughout the province. The northern Ontario sistance policies of the Department, which vary from year to year, are also administered the Branch. The Branch endorses and assists the 4-H Clubs and the Junior Farmers' sociation of Ontario.

The Home Economics Branch conducts an extension program for rural women's groups d for girls' 4-H home-making clubs. The senior program deals with the study of foods, trition, clothing, textiles, home furnishings, home crafts and home management.

The Information Branch publishes and distributes several hundred publications vering most areas of agriculture in Ontario, as well as home gardening and homemaking. ews releases, radio tapes and television are used to convey information on important anges in agriculture to farmers. Its film library distributes more than 2,000 films nually to the public.

The Agricultural and Horticultural Societies Branch advises and offers financial istance to agricultural and horticultural societies and ploughmen's associations through- the province and administers the Community Centres Act which authorizes grants to nicipalities for capital investments in community centres and recreational facilities.

The Ontario Telephone Service Commission provides technical and management advice the 66 Independent Telephone Systems (municipal and privately owned) operating rural Ontario.

The Farm Economics, Co-operatives and Statistics Branch does research into marke ing, policy, production, land use, and dairying; works with the Dominion Bureau of Statisti to collect and publish statistics on farm production and marketing; and provides servic to various Ontario agricultural co-operatives.

Manitoba.—The Department of Agriculture serves Manitoba through the followi branches.

The Extension Service Branch deals with rural extension education generally and h specialists devoting attention particularly to agricultural engineering, entomology a beekeeping, radio, TV and information, 4-H Clubs and women's work, manpower and rur development. Meetings, field days, and short courses are held; 39 agricultural represent tives and four assistants are located in 37 offices in the province, each serving from one five municipalities, four manpower extension agents serve the Interlake region, and home economists serve designated areas.

The Animal Industry Branch develops and administers policies that encourage t improvement and efficient production of different classes of livestock, including poultr supervises the grading of cream and inspects dairy manufacturing plants. Several A to promote high quality products for consumer protection are administered in co-operati with federal departments.

The Soils and Crops Branch encourages the development, production and improv ment of cereal, forage and special crops and horticulture and promotes proper land u through soil conservation programs. The Branch develops and administers policies th encourage good field crop husbandry, soil conservation, land development and weed contr

The Economics and Publications Branch deals with agricultural economics, sup vises the farm business clubs and publishes and distributes annually approximately 250,0 bulletins, circulars, posters, leaflets, etc. The Branch is responsible for publishing p vincial agricultural statistics and maintains an agriculture reference library.

The Co-operative Services Branch registers and supervises co-operatives and cre unions and administers the Acts governing them. It also collects and compiles statist on co-operative activity throughout the province. Producer marketing boards and Mark ing Commissions under the Natural Products Marketing Act are also served and admi stered through this Branch.

The Veterinary Services Branch provides a diagnostic laboratory for animal diseas administers the Veterinary Services District Act and the Veterinary Science Scholars Fund Act; and works in close co-operation with practising veterinarians and the fede Health of Animals Branch in the control of livestock and poultry diseases.

Saskatchewan.—The Saskatchewan Department of Agriculture is composed of following branches and services.

The Agricultural Extension Branch is the main extension agency of the Departm and has the primary objective of maintaining and increasing the over-all efficiency agricultural production. To that end it provides a basic extension program designed (1) ensure that the most modern farming techniques and the latest research findings made available to farmers; (2) provide leadership and general guidance in agricultu adjustment programs needed to bring about necessary social and economic progress; a (3) co-ordinate and administer field programs and policies sponsored by other branches the purpose of encouraging desirable adjustments in agricultural production and to c with emergency situations. The Branch endeavours to maintain close co-operation w other branches of the Department as well as with the University of Saskatchewan and Canada Department of Agriculture in the three-way co-ordination of agencies known the co-operative extension program.

The Production and Marketing Branch is comprised of three major Divisions—Ani Industry, Plant Industry and Veterinary. The first two provide specialist services

icultural representatives and agriculture in field crops, weed and insect control, soil servation, horticulture, apiculture, livestock and poultry, and administer related Acts l programs. The Veterinary Division administers the Veterinary Service District Act l Calfhood Vaccination Program, provides laboratory services and co-operates with the leral Government and local veterinarians in disease prevention and control.

The Conservation and Development Branch provides engineering services and some ncial assistance for irrigation development programs and water utilization and control jects. Land reclamation and development and the construction of provincial community tures also come within its jurisdiction.

The Lands Branch administers Crown land, except forest reserves and parks in settled as, classifies it according to the use for which it is best suited and disposes of it under se or sale. The Branch also secures land control for land utilization projects, supervises v settlement projects, pays for clearing and breaking by farmers on provincial leases, rates provincial community pastures and operates training farms for people of Indian restry.

The Family Farm Improvement Branch gives farmers technical advice on farm buildings, farmstead planning, mechanization and materials handling. The Branch conducts earch for farm water and sewage works, provides technical and financial assistance for ir installation and administers the Agricultural Implements Act.

The Economics and Statistics Branch undertakes research and investigations required formulate and evaluate policies and programs that will ensure a high level of growth and ciency in Saskatchewan's agriculture; it collects, analyses and distributes economic rmation. The Farm Management Division carries out an extension program in farm iness management. Data on crop conditions, production, marketings and income are ilable from the Statistics Division.

Alberta.—The Alberta Department of Agriculture has seven Divisions whose activities co-ordinated by an Executive Committee made up of the seven Directors, the Deputy nister and his executive assistant.

The Plant Industry Division administers programs and policies relating to crop improvement, crop protection and pest control, weeds, soils and fertilizers, horticulture, culture and special projects. It operates a crop clinic in Edmonton, a horticultural earch station at Brooks and an extensive tree nursery at Oliver, which supplies millions rees yearly for farm planting and for reforestation.

The Animal Industry Division administers legislation, policies and programs in the ad area of livestock, dairy and poultry production and in processing and marketing. luded are: setting standards for and approving public sales of sires, ROP programs for f cattle, swine and sheep, extension programs for all classes of stock, administering stands and qualifications for the artificial insemination (AI) industry; supervising feeder ociations; brand registration and inspection; licensing of butchers, livestock dealers, kyards and AI technicians; pound districts and sale of horned cattle. The testing, ding and purchasing of raw produce by all dairy plants are under regulation, as are ndards of construction, manufacture, processing, sanitation and temperature control dairy and frozen-food plants. A regular cow-testing service to provide the basis for eding, feeding and culling dairy cattle is available to dairy producers, and chemical and teriological analyses are conducted for industrial directives. Licences are issued to ltry hatcheries, wholesalers, first receivers and truckers, and programs are conducted control of pullorum-typhoid diseases of chicken- and turkey-hatching egg supply flocks; ension programs, cost studies, disease tests and surveys, and research projects with ject to poultry are also carried out.

The Veterinary Services Division provides diagnoses of livestock and poultry diseases conducts investigations of disease conditions; provides lecture service for the University Alberta and for other groups; promotes policies aimed at reducing losses such as vibriosis

control, stockyard inspection, swine health programs and mastitis; administers the licensin of live fur bearing animals and pelts; and assists fur farmers in care, management an stock improvement.

The Extension Section of the Extension and Colleges Division co-ordinates the exten sion programs of every Division of the Department of Agriculture. In association wit other extension agencies, it assumes leadership in the formulation and implementatio of District and regional programs for agriculture, family living and community develop ment. The four Extension Branches operate mainly through 54 District Extension Offic co-ordinated and supervised by six regional agriculturists, and complemented by an expand ing staff of regional specialists in livestock, plant industry, engineering and home economic Leadership training is also provided. The Information Branch is in charge of extensio through mass media. It distributes bulletins, pamphlets, building plans, releases, timel articles and news material to the press, conducts radio programs five days a week over 1 radio stations and takes an increasing part, both directly and indirectly in the productio of television programs on all phases of agriculture and home-making.

Agricultural and vocational colleges are operated at Olds, Vermilion and Fairview, a three offering five courses in agriculture—a general course, or majors in plant science, anim science, agricultural mechanics and farm management. They also offer a complete busine course. Special short courses offered at one or the other of the colleges include land apprais and assessment, artificial insemination, welding and motor mechanics, irrigation technolog pesticide applicators, building materials merchandising, automation technology, dai production and custodial housekeeping.

The Agricultural Economics Division provides extension information on farm manag ment, credit and marketing to aid farmers in instituting good business practices on th farm; collects, analyses and disseminates agricultural statistics in collaboration with th Dominion Bureau of Statistics; conducts studies on farm production costs and return marketing, and resource and rural development; and provides advisory assistance on ec nomic matters to government departments, the agriculture industry and farm group Credit is made available to farmers for the purchase of land under the Farm Purchase Cred Act and for home improvements under the Farm Home Improvement Act.

The Water Resources Division administers legislative control over the province water resources and all functions connected with the allocation, apportionment, and dist bution of surface and ground water. Its basic responsibility is to foster an orderly develo ment of available water supplies to meet all the foreseeable needs of the province. Th the Division is responsible for Alberta's large-scale water conservation and developme program known as "The Prairie Rivers Improvement and Management Evaluatio (PRIME), embodying major water diversion and storage areas for the transfer of wat from areas of surplus to areas of deficiency. Divisional programs include: (1) design a construction activities on water control, water development and conservation when it in the public interest to do so; (2) inventory, distribution and magnitude of surface a ground water; (3) land development planning for irrigation purposes and the manageme and use of water as it relates to agricultural production; and (4) activities related to seepa and salted land reclamation, development and improvement of irrigation practices, a determination of the physical characteristics of soils relevant to the soil water phenome

The Program Development Division administers the ARDA and related rural develo ment programs, the Conservation and Utilization Branch, including the land assemb program, the farm adjustment and consolidation program, the land improvement a conservation program, the renewable resources research program, the Utilization of Lan and Forests Act and the Canada Land Inventory. Other Branches of the Division inclu the Agricultural Products Marketing Council, which establishes and regulates marketi boards and commissions to assist in the marketing of agricultural products; the Municip Agricultural Programs Branch, which assists in programs carried out by local authoriti administers the federal-provincial manpower agreements, and assists in the administrati and achievement of objectives of agricultural societies; and the Irrigation Secretariat, wh

inisters, for the Irrigation Council, the Alberta Irrigation Act in the areas of administra-, operation, maintenance, and reconstruction of irrigation projects and districts in province.

British Columbia.—The Department of Agriculture comprises four Divisions—inistrative Services, Production Services, Special Services and General Services. inistrative Services is responsible for the direction of policies affecting farmers' insti-s, grants, accounts, personnel and publications. Production Services includes the ary, Dairy, Field Crops, Horticulture, Livestock, Poultry, Farm Management and 4-H bs Branches, and district agriculturists. Special Services includes the Animal Pathology, ineering, Entomology, Markets and Statistics, Soils, Veterinary and Plant Pathology nches. The remainder—Agricultural Rehabilitation and Development Act (ARDA), rmation Service, British Columbia Marketing Board, British Columbia Milk Board the Crop Insurance Branch—are grouped under General Services.

In addition to the headquarters staff at Victoria, the Department maintains 19 district es in various parts of the province, as well as a veterinary laboratory and poultry-testing ion at Abbotsford, a beef-testing station at Kamloops and dairy and entomology labora-es at Vancouver and Cloverdale, respectively. Soil-testing facilities are installed at wna and Victoria.

Subsection 2.—Agricultural Schools, Colleges and Universities

All of the provinces of Central and Western Canada have agricultural colleges in ciation with universities that give courses leading to degrees in agricultural science home economics and also provide postgraduate courses; the University of British mbia has a faculty of Agricultural Sciences; Ontario, Quebec and Saskatchewan have rinary colleges. In addition, all of these provinces have schools of agriculture or oma courses that provide basic training for young people intending to return to farms nterested in employment in businesses allied with agriculture.

In Alberta, these programs are offered at the vocational, technician and technologist ls by three agricultural and vocational colleges which also engage in applied agricultural arch and offer programs in adult education and upgrading (see p. 570).

In the Maritime Provinces, training in scientific agriculture is available at colleges in ce Edward Island and Nova Scotia where courses leading to third-year admission to ee courses elsewhere are given. Vocational and short courses are available in all three inces. All colleges of agriculture engage in research and extension activities.

Section 4.—Statistics of Agriculture*

The collection, compilation and publication of statistics relating to agriculture is a onsibility of the Dominion Bureau of Statistics. Valuable information is obtained ugh the Censuses of Canada, through partial-coverage mailed questionnaire surveys from the administrative records of government operations.

The Bureau collects and publishes primary and secondary statistics of agriculture on nnual and monthly basis. The primary statistics relate mainly to the reporting of conditions, crop and livestock estimates, wages of farm labour and prices received by ers for their products. The secondary statistics relate to farm income and expenditure, capita food consumption, marketing of grain and livestock, dairying, milling and sugar stries and cold storage holdings. In the collection of annual and monthly statistics, Canada Department of Agriculture and various provincial departments, as well as such cies as the Board of Grain Commissioners and the Canadian Wheat Board, contribute stical data to the Bureau and aid directly in DBS survey work. Many thousands of

* Revised in the Agriculture Division, Dominion Bureau of Statistics.

farmers throughout Canada send in reports voluntarily and dealers and processors als provide much valuable data. The figures contained in this Section do not include estimate for Newfoundland; agriculture plays a relatively minor part in Newfoundland's economy and commercial production of most agricultural products is quite small. In the followin Subsections, details are given for 1969 with earlier comparisons; figures for the latest yea are subject to revision and it should be noted that many of those given for earlier year have been revised since the publication of the 1969 Year Book.

Subsection 1.—Income from Farming Operations

Cash Receipts from Farming Operations.—Estimates of cash receipts from farmin operations include data concerning cash receipts from the sale of farm products, Canadia Wheat Board participation payments on previous years' grain crops, net cash advances o farm-stored grains in Western Canada, deficiency payments made by the Agricultur Stabilization Board, and supplementary payments. Farm cash receipts from the sale o farm products include the returns from all sales of agricultural products except tho associated with direct inter-farm transfers. The prices used to value all products sold a prices to farmers at the farm level; they include any subsidies, bonuses and premiums th can be attributed to specific products but do not include storage, transportation, processin and handling charges which are not actually received by farmers.

Total cash receipts from farming operations for 1969, excluding supplementary pa ments, are estimated at $4,195,600,000 for Canada (excluding Newfoundland). Th estimate is 3.7 p.c. below the value of $4,355,200,000 obtained in 1968 but 3.4 p.c. abo the average for the five years 1964-68. This decrease in cash receipts can be attributed f the most part to lower returns from wheat and Canadian Wheat Board participation pa ments being only partially offset by increased receipts from the sale of most of the iter included in livestock and livestock products.

While the Maritime Provinces, Quebec and Ontario showed increases in total ca receipts ranging from 3.7 p.c. in Ontario to 14.6 p.c. in Nova Scotia, estimates for t Prairie Provinces and British Columbia were lower than for 1968. The greatest decli occurred in Saskatchewan where total cash receipts fell by almost 20 p.c.; in Manitoba a Alberta the decrease was 3.3 p.c. and 8.9 p.c., respectively, and in British Columbia it w only 1.8 p.c.

7.—Cash Receipts from Farming Operations (excluding Supplementary Payments)[1], by Province, 1965-69

Province	1965	1966	1967	1968	1969
	$'000	$'000	$'000	$'000	$'000
Prince Edward Island	40,641	37,016	33,830	34,541	37,87
Nova Scotia	50,835	54,074	54,182	54,984	63,01
New Brunswick	59,924	52,626	48,139	49,208	51,75
Quebec	503,790	589,845	620,120	636,275	678,09
Ontario	1,094,126	1,243,473	1,281,936	1,317,349	1,365,93
Manitoba	341,799	376,520	372,699	364,667	352,53
Saskatchewan	886,884	948,649	976,185	892,819	716,1
Alberta	664,199	762,950	792,901	800,981	729,53
British Columbia	163,898	188,026	196,784	204,424	200,7
Totals	**3,806,096**	**4,253,179**	**4,376,776**	**4,355,248**	**4,195,5**

[1] See text below.

In addition to the above income, farmers received supplementary payments amount to $9,900,000 compared with $8,000,000 in 1968. The 1968 payments consisted entir of those made under the Prairie Farm Assistance Act* but in 1969 payments to sugar b

* Payments to farmers under the Prairie Farm Assistance Act are made from the Prairie Farm Emergency F to which farmers contribute by means of a 1-p.c. levy on grain marketings.

wers in Ontario were also included. Thus, farm cash receipts from farming operations l supplementary payments totalled $4,205,500,000 in 1969, an amount 3.6 p.c. below estimated $4,363,200,000 in 1968.

Field Crops.—During 1969, farmers' total returns from the sale of field crops, cash vances on farm-stored grains in Western Canada and Canadian Wheat Board payments ounted to $1,479,400,000, 14.7 p.c. below the 1968 level of $1,734,800,000. This estimate resents about 35 p.c. of farmers' total cash receipts from farming operations, a fairly ge decline from the almost 40-p.c. share in 1968. The decline was caused mainly by siderably lower Canadian Wheat Board participation payments on previous years' in crops and lower returns from the sale of wheat.

With both marketings and average initial prices of wheat below those prevailing in previous year, 1969 returns from this source fell by slightly more than $125,000,000, a cline of 20.8 p.c. Although average prices of oats and barley at time of delivery were o lower than in 1968, increased marketings of both grains more than offset the lower ces, resulting in larger returns to the farmer. The average price received for flaxseed s also lower than in 1968 but a very large increase in marketings caused receipts to rise m $26,400,000 in that year to $57,000,000 in 1969. Returns to rapeseed producers were her in 1969 than in 1968; higher prices and increased marketings resulted in cash receipts ng from $33,200,000 to $50,500,000. Smaller increases were registered for corn, sugar ets and tobacco but receipts from potatoes rose from $61,300,000 to $67,000,000.

Canadian Wheat Board participation payments on previous years' wheat, oat and barley ps declined markedly in 1969 from 1968. For wheat, payments fell from $315,300,000 $60,200,000; for oats, from $8,400,000 to $4,800,000; and for barley, from $35,900,000 to 500,000. This decline was caused by smaller total final payments on the 1967 crop ative to those made in 1968 on the 1966 crop. The smaller payments reflect a reduction the per-bushel payments and the marketings on which the payments are made.

Livestock and Livestock Products.—Farmers' cash receipts from the sale of livestock and estock products in 1969 amounted to $2,603,000,000, an increase of 4.8 p.c. over the 1968 el of $2,483,400,000. Lower marketings of cattle and calves in the later year were only rtly offset by higher prices and cash receipts declined from $980,400,000 in 1968 to 59,600,000. Although hog marketings were also down, higher average prices brought eipts up to $461,300,000 from $409,900,000 in 1968, an increase of 12.5 p.c. Both sales d prices of eggs were higher in 1969 than in the previous year so that returns to egg oducers went up 15 p.c. to $188,400,000. Poultry meat receipts rose to $249,600,000, re than $20,000,000 above the 1968 level; average prices differed only slightly for the o years but marketings in 1969 were higher. Both quantity marketed and average prices dairy products rose during 1969, increasing returns to dairy producers by 5.1 p.c. to 76,900,000. In addition, dairy producers received supplementary payments amounting $86,900,000, which was 20.7 p.c. below the $109,700,000 received in 1968. Cash receipts m sheep and lambs showed a small increase from $8,700,000 to $8,800,000.

8.—Cash Receipts from Farming Operations, by Commodity or Other Source, 1965-69

Item	1965	1966	1967	1968	1969
	$'000	$'000	$'000	$'000	$'000
eat	658,842	803,629	766,018	605,262	479,067
eat, Canadian Wheat Board payments	271,974	200,151	270,192	315,302	60,199
s	31,144	36,118	25,920	23,629	27,685
s, Canadian Wheat Board payments	4,707	6,850	12,331	8,420	4,815
rley	79,377	84,047	99,815	84,853	91,764
rley, Canadian Wheat Board payments	20,093	22,218	29,256	35,860	3,501
nadian Wheat Board net cash advance payments	5,997	—4,667	6,569	52,616	157,906
e	9,489	15,190	7,804	5,877	4,991
xseed	47,120	62,267	46,235	26,439	57,028
peseed	31,120	45,950	43,192	33,247	50,544
ybeans	14,120	19,793	21,353	22,363	16,689

8.—Cash Receipts from Farming Operations, by Commodity or Other Source, 1965-69—concluded

Item	1965	1966	1967	1968	1969
	$'000	$'000	$'000	$'000	$'000
Corn	24,842	28,540	28,582	24,856	28,0
Sugar beets	12,005	12,179	13,051	12,415	15,5
Potatoes	102,386	72,661	51,726	61,309	67,0
Fruits	63,957	75,759	79,637	86,579	87,5
Vegetables	80,624	86,660	97,332	93,732	90,6
Tobacco	88,404	117,911	156,710	142,374	144,9
Other crops	86,840	89,605	91,879	99,662	91,0
Totals, Cash Receipts from Crops	1,633,041	1,774,861	1,847,602	1,734,795	1,479,4
Cattle and calves	789,984	915,581	929,723	980,392	969,5
Hogs	368,377	414,123	408,806	409,900	461,3
Sheep and lambs	9,657	8,817	8,485	8,659	8,7
Dairy products	559,424	584,089	624,416	644,223	676,9
Poultry	196,870	232,569	223,608	227,952	249,0
Eggs	147,703	169,755	148,648	163,821	188,4
Other livestock and products	54,215	49,805	49,823	48,442	48,2
Totals, Cash Receipts from Livestock and Products	2,126,230	2,374,739	2,393,509	2,483,389	2,602,9
Forest and maple products	23,496	26,578	22,270	21,813	18,2
Dairy supplementary payments	16,912	68,591	103,229	109,700	86,9
Deficiency payments	6,417	8,410	10,166	5,551	8,0
Totals, Cash Receipts, excl. Supplementary Payments	**3,806,096**	**4,253,179**	**4,376,776**	**4,355,248**	**4,195,8**
Supplementary payments[1]	12,762	41,345	6,137	7,968	9,9
Totals, Cash Receipts	**3,818,858**	**4,294,524**	**4,382,913**	**4,363,216**	**4,205,8**

[1] See text on pp. 572-573.

Farm Net Income.—Two different estimates of farm net income from farming ope tions are prepared by DBS. *Realized net income* is obtained by adding together farm c receipts from farming operations, supplementary payments and the value of income in ki and deducting farm operating expenses and depreciation charges; this estimate represe the amount of income from farming that operators have left for family living, perso taxes and investment after provision has been made for operating expenses and depreciat charges. *Total net income* is obtained by adjusting realized net income to take into acco changes occurring in inventories of livestock and stocks of grains on farms between beginning and end of the year; this estimate is used in calculating the contribution of a culture to national income and for making comparisons with net income of non-farm busin enterprises.

For 1969, the estimated realized net income of farm operators from farming operati amounted to $1,379,500,000, 10 p.c. below the 1968 value of $1,532,800,000 and 11.8 p below the 1964-68 average value of $1,564,800,000. During 1969, the 3.6-p.c. decrease farm cash receipts and the higher farm operating expenses were only partially offset increased income in kind and supplementary payments.

The 1969 estimate of total net income, which takes into account changes in farm ventories, amounted to $1,688,400,000, 3.1 p.c. below the 1968 level of $1,743,100,000 4.9 p.c. above the 1964-68 average of $1,609,400,000. The decrease in cash receipts resul mainly from lower returns from wheat and Canadian Wheat Board participation payme being only partially offset by increased receipts from the sale of most of the items inclu in livestock and livestock products. The gain in the value of inventory change for 1 can be attributed to substantial additions to farm-held stocks of grains and a build-up the numbers of livestock on farms. Supplementary payments were also higher in 1 and operating expenses continued to rise.

In 1969, operating expenses and depreciation charges reached a new high level of ,429,100,000, a figure 1.8 p.c. above the 1968 value of $3,367,100,000. Farmers' outlays re higher in all provinces except Manitoba and Saskatchewan. For Canada as a whole, oss farm rent, fertilizer and lime, "other" livestock expenses, repairs to buildings, and the scellaneous category all showed decreases over the previous year. Most noticeable was e decline in outlays for fertilizer and lime which were quite substantial in the Prairie ovinces and only a little less so in Ontario; there was a considerable fall in the quantity rchased and prices were lower. Estimates of gross farm rents were down by 4.7 p.c. mpared with 1968, a drop caused by lower values of cash and share rents in the Prairie ovinces. The size of the hired farm labour force was reduced in the latter part of 1969 t, because wage rates rose to a new high, the outlay for wages to farm labour reached ghtly more than $300,000,000. Higher rates of interest and an expanded use of capital l to a further increase in total interest payments. Machinery expenses as a whole moved by about $20,000,000 to a record $554,400,000. Outlays for machinery repairs increased all provinces except Saskatchewan and the Maritimes. The general decline in feed ices was more than offset by a slight increase in the quantity purchased and outlays rose 4.9 p.c. from $528,500,000 in 1968 to an estimated $554,500,000 in 1969. Expenses curred in repairing buildings together with electricity and telephone bills varied very tle between the two years. Depreciation charges on farm buildings and machinery, hich rose in 1969, are intended to reflect the amount that farmers would have to pay to commodate the decline in the value of farm buildings and machinery due to obsolescence d wear.

9.—Net Income of Farm Operators from Farming Operations, by Item and by Province, 1965-69

(Exclusive of Newfoundland)

NOTE.—Includes estimated rental value of farm homes, supplementary payments made under the provisions of Prairie Farm Assistance Act and payments under the Western Grain Producers' Acreage Payment Regulations.

Item and Province	1965	1966	1967	1968	1969
	$'000	$'000	$'000	$'000	$'000
Item					
Cash receipts from farming operations	3,806,096	4,253,179	4,376,776	4,355,248	4,195,593
Income in kind	411,945	442,731	480,192	536,716	603,102
Supplementary payments	12,762	41,345	6,137	7,968	9,935
Realized gross income (Items 1+2+3)	4,230,803	4,737,255	4,863,105	4,899,932	4,808,630
Operating and depreciation charges	2,712,243	2,993,568	3,211,912	3,367,111	3,429,129
Realized net income (Items 4-5)	1,518,560	1,743,687	1,651,193	1,532,821	1,379,501
Value of inventory changes	48,216	205,177	−155,115	210,312	308,866
Total gross income (Items 4+7)	4,279,019	4,942,432	4,707,990	5,110,244	5,117,496
Totals, Net Income (Items 8-5)	**1,566,776**	**1,948,864**	**1,496,078**	**1,743,133**	**1,688,367**
Province					
nce Edward Island	14,614	16,793	5,786	9,097	8,980
va Scotia	17,013	16,990	17,502	18,765	25,941
w Brunswick	24,431	21,665	10,806	12,446	11,130
ebec	142,155	221,767	194,333	200,520	229,157
tario	340,453	467,762	388,787	398,753	446,743
nitoba	169,371	148,628	154,620	164,601	123,408
skatchewan	482,701	582,958	359,649	464,088	450,986
berta	306,363	388,457	279,473	373,581	299,498
itish Columbia	69,675	83,844	85,122	101,282	92,524

Subsection 2.—Volume of Agricultural Production

The index of physical volume of agricultural production for Canada (1949 = 100) is imated at 179.7 for 1969, about 5 p.c. above the 1968 estimate of 171.1. This is the cond highest point on record, being exceeded only by the 1966 index of 183.3. Greater

production of grain crops in 1969, particularly in Saskatchewan, was the main contribut to the increase over 1968, which also reflected lesser gains in output of poultry meat, eg and dairy products.

Increased over-all production was limited to four provinces—Prince Edward Islan Nova Scotia, Quebec and Saskatchewan—most of it occurring in Saskatchewan as a res of larger grain crops and some gain in output of poultry products. In the two Mariti Provinces, production was up for livestock, poultry meat and dairy products, and e production was also higher in Nova Scotia. The gain in Quebec was attributable to creased output of poultry meat and dairy products.

The greatest percentage decline in total production took place in Manitoba where almost 10-p.c. drop resulted from lower production of wheat and oats; this decline v offset to some extent by an increase in the output of livestock and poultry products. British Columbia, output was down about 5 p.c.; in that province, there were some increa in output of poultry meat, eggs and potatoes but declines for grains, livestock and fru Production in New Brunswick was down 3 p.c. because reduced output of potatoes a livestock more than offset higher production of poultry meat. In Ontario, the over- decline was 1.5 p.c.; there, production was up for hogs, poultry meat, eggs and fruits l down for grain, potatoes and cattle. Farmers in Alberta produced about 1 p.c. less in 19 than in 1968; lower production of grains and dairy products slightly more than offset ga in potatoes, poultry meat and eggs.

The index has been developed as an index of unduplicated gross farm production a in its construction, provision was made to avoid double-counting of farm output. Witl a province, such double-counting could occur when feed grains, credited to field crop p duction, are fed to livestock and appear later as livestock and livestock products. Int provincially, this duplication could occur when feed grains produced in one province fed in another, and when feeder cattle raised in one section of the country are shipped another for finishing.

10.—Index Numbers of Physical Volume of Agricultural Production, by Province, 1960

(1949=100. Exclusive of Newfoundland)

NOTE.—For a description of the index, methods and coverage, see DBS publication *Index of Farm Produc 1966* (Catalogue No. 21-203).

Year	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	To
1960	89.2	112.3	84.7	124.2	122.8	123.0	160.4	146.4	130.7	13
1961	93.3	118.5	87.1	132.7	134.1	83.7	74.7	144.2	141.3	11
1962	93.7	122.0	89.2	142.0	140.0	147.3	166.2	159.1	149.6	14
1963	94.8	123.8	86.5	142.7	140.4	128.3	222.7	183.8	148.6	16
1964	103.7	119.9	89.9	142.7	145.8	156.9	151.1	176.7	163.4	15
1965	97.5	122.9	88.2	144.4	146.6	165.7	185.6	192.1	154.8	16
1966	114.6	127.1	97.8	154.9	156.9	159.0	238.5	221.6	174.9	18
1967	102.9	131.4	90.8	159.9	154.8	163.1	150.6	184.0	175.2	15
1968	110.6	134.5	97.1	165.8	158.4	176.4	170.4	211.9	178.9	17
1969	111.5	140.5	94.2	170.8	156.1	159.3	222.4	209.1	169.0	17

Subsection 3.—Field Crops*

The 1969 index of field crop production for Canada (1949=100) was 196.7, the sec highest level on record. It was substantially above the 1968 index of 181.4 but remai below the record of 203.0 achieved in 1966. In Manitoba, the estimated field crop prod tion resulted in an index of 160. 6, down from the record 183. 6 obtained in 1968; the Saskat ewan production index, at 259.1, was well above the 1968 level of 196.4 but short of

* The supply and disposition of the major Canadian grains is dealt with in Chapter XXI, Pt. I, Sect. 2, u the heading of "The Grain Trade, 1968-69 and 1969-70".

cord 274.2 set in 1966; and the index for Alberta was 239.8 compared with 229.8 in 1968 d the record of 252.1 set in 1966. The 1969 field crop production indexes for the eastern ovinces compared quite closely with those of 1968. The Ontario index was 160.5 com- red with the 1968 record figure of 167.1; the Quebec index at 128.4 was slightly below the 68 index of 128.7 and a little more below the 1967 record of 132.0; and in Prince Edward land, Nova Scotia and New Brunswick the 1969 indexes were 114.1, 55.7 and 86.3, respec- vely, compared with 116.6, 55.7 and 97.4, respectively, in the preceding year.

Canada's 1969 wheat crop, estimated at 684,300,000 bu., was some 5 p.c. above the 68 crop of 649,800,000 bu. The average yield at 27.4 bu. per acre was 24 p.c. above the 68 yield of 22.1 bu. and 31 p.c. above the 10-year (1958-67) average of 20.9 bu. The erage protein content of the 1969 crop of hard red spring wheat was 13.9 p.c., unchanged om the level of the previous year but above the 13.6 p.c. average for the wheat crops of e past 20 years.

Supplies of Canadian feed grains (corn, oats, barley, rye, mixed grains and buckwheat) the crop year 1969-70 amounted to 1,301,500,000 bu., some 16 p.c. above the 1968-69 tal of 1,122,500,000 bu. All feed grains except corn contributed to the increase, as well higher opening stocks of oats, barley, rye and corn. Supplies of oats (Aug. 1, 1969 rryover of 128,700,000 bu. plus a crop of 371,400,000 bu.) totalled 500,100,000 bu., 14 c. higher than the previous year's total of 439,500,000 bu.; supplies of barley, at a record 7,800,000 bu. (carryover of 199,400,000 bu. plus a crop of 378,400,000 bu.), were 27 p.c. ove the 1968-69 total of 456,300,000 bu.; supplies of rye at 25,200,000 bu. were 22 p.c. ove the 1968-69 total of 20,500,000; and the 1969 crops of mixed grains reached an esti- ated 87,300,000 bu. Production of grain corn, on the other hand, was 73,400,000 bu., 10 c. below the 1968 record of 81,200,000 bu.

Acreages, yields and prices of the principal field crops in the three years 1967-69, with erages for 1962-66, are shown in Table **11**; acreages, yields and values of field crops by ovince for 1968 and 1969, with averages for 1963-67, in Table **12**; and acreages and pro- iction of grain in the Prairie Provinces for the years 1964-69 in Table **13**.

1.—Acreages, Yields and Prices of Principal Field Crops, 1967-69, with Average for 1962-66

(Exclusive of Newfoundland)

Crop and Year	Area	Yield per Acre	Production	Average Price	Total Value[1]
	'000 acres	bu.	'000 bu.	$ per bu.	$'000
heat—					
Av. 1962-66	28,416	23.7	673,312	1.69	1,141,018
1967	30,121	19.7	592,920	1.63	963,959
1968	29,422	22.1	649,844	1.34	872,581
1969	24,968	27.4	684,276	[2]	[2]
ts—					
Av. 1962-66	8,835	46.6	412,031	0.69	282,877
1967	7,436	40.9	304,178	0.72	220,392
1968	7,556	48.0	362,516	0.60	216,340
1969	7,655	48.5	371,387	[2]	[2]
rley—					
Av. 1962-66	6,108	35.2	215,021	1.00	214,725
1967	8,115	30.6	248,662	0.87	216,736
1968	8,836	36.8	325,373	0.81	265,148
1969	9,535	39.7	378,383	[2]	[2]
ve—					
Av. 1962-66	712	20.6	14,682	1.09	15,948
1967	685	17.5	11,981	1.09	13,008
1968	679	19.2	13,049	1.03	13,406
1969	927	17.8	16,493	[2]	[2]

For footnotes, see end of table, p. 578.

11.—Acreages, Yields and Prices of Principal Field Crops, 1967-69, with Average for 1962-
—concluded

Crop and Year	Area	Yield per Acre	Production	Average Price	Total Value[1]
	'000 acres	bu.	'000 bu.	$ per bu.	$'000
Mixed Grains—					
Av. 1962-66	1,586	47.5	75,282	0.88	66,527
1967	1,668	45.8	76,427	0.94	72,058
1968	1,667	51.4	85,602	0.85	73,094
1969	1,740	50.2	87,346	[2]	[2]
Flaxseed—					
Av. 1962-66	1,868	11.6	21,736	2.85	61,861
1967	1,023	9.2	9,378	3.08	28,845
1968	1,524	12.9	19,666	2.88	56,594
1969	2,341	11.8	27,548	[2]	[2]
Potatoes—		cwt.	'000 cwt.	$ per cwt.	
Av. 1962-66	293	164.3	48,147	2.03	97,880
1967	304	153.9	46,743	1.82	85,046
1968	303	174.4	52,883	1.63	86,037
1969	306	169.3	51,859	[2]	[2]
Tame Hay—		ton	'000 tons	$ per ton	
Av. 1962-66	12,707	1.81	23,005	17.91	412,014
1967	12,902	1.97	25,385	17.86	453,261
1968	12,438	1.85	23,034	18.50	426,134
1969	12,606	2.03	25,577	[2]	[2]

[1] Gross value of farm production; does not represent cash income from sales. [2] Not available at time going to press; will be published in the *Quarterly Bulletin of Agricultural Statistics* (Catalogue No. 21-003).

12.—Acreages, Production and Values of Field Crops, by Province, 1968 and 1969, with Average for 1963-67

(Exclusive of Newfoundland)

Field Crop and Province	Area			Total Production			Gross Farm Valu	
	Average 1963-67	1968	1969	Average 1963-67	1968	1969	Average 1963-67	1968
	'000 acres	'000 acres	'000 acres	'000 bu.	'000 bu.	'000 bu.	$'000	$'00
Wheat	**29,076**	**29,422**	**24,968**	**678,779**	**649,844**	**684,276**	**1,145,512**	**872,**
Prince Edward Island	3	2	2	82	74	92	141	
Nova Scotia	1	2	3	36	82	138	62	
New Brunswick	3	4	4	95	149	122	164	
Quebec	23	30	29	599	831	754	1,024	1,
Ontario—								
Winter	397	355	360	15,923	14,910	14,328	27,547	26,
Spring	20	11	9	529	298	242	915	
Manitoba	3,311	3,400	2,500	78,800	91,000	64,000	132,286	119,
Saskatchewan	18,937	19,000	16,600	423,400	372,000	461,000	719,844	499,
Alberta	6,273	6,460	5,300	156,600	166,000	140,000	259,464	216,
British Columbia	109	158	160	2,714	4,500	3,600	4,064	6,
Oats	**8,209**	**7,556**	**7,655**	**374,344**	**362,516**	**371,387**	**261,224**	**216,**
Prince Edward Island	88	78	71	4,369	4,290	4,089	3,559	3,
Nova Scotia	28	25	24	1,270	1,195	1,248	1,138	1,
New Brunswick	80	67	69	3,462	2,968	3,167	2,891	2,
Quebec	1,074	984	975	42,431	41,918	38,415	36,992	34,
Ontario	1,368	984	810	72,485	58,745	42,768	56,534	45,
Manitoba	1,582	1,580	1,530	67,800	81,000	69,000	45,526	40,
Saskatchewan	1,795	1,800	2,100	81,600	74,000	107,000	51,872	36,
Alberta	2,123	1,960	2,000	97,600	94,000	102,000	60,542	49,
British Columbia	71	78	76	3,327	4,400	3,700	2,169	2,

[1] Values for 1969 not available at time of going to press; see footnote [2], Table **11.**

12.—Acreages, Production and Values of Field Crops, by Province, 1968 and 1969, with Average for 1963-67—continued

Field Crop and Province	Area			Total Production			Gross Farm Value[1]	
	Average 1963-67	1968	1969	Average 1963-67	1968	1969	Average 1963-67	1968
	'000 acres	'000 acres	'000 acres	'000 bu.	'000 bu.	'000 bu.	$'000	$'000
rley	**6,674**	**8,836**	**9,535**	**231,579**	**325,373**	**378,383**	**226,867**	**265,148**
rince Edward Island	13	16	20	541	886	1,054	585	939
Nova Scotia	3	5	6	120	227	304	149	284
New Brunswick	5	8	10	187	345	409	228	404
Quebec	16	18	24	575	695	866	688	834
Ontario	197	300	315	8,966	16,320	15,750	10,391	17,299
Manitoba	705	1,170	1,200	23,000	43,000	42,000	23,118	33,970
askatchewan	1,937	2,510	2,700	67,200	80,000	109,000	66,146	62,400
Alberta	3,656	4,650	5,100	126,800	178,000	204,000	121,832	144,180
British Columbia	142	160	160	4,191	5,900	5,000	3,730	4,838
l Rye	**623**	**591**	**821**	**13,055**	**11,589**	**14,535**	**14,228**	**11,906**
Quebec	4	4	4	95	104	112	106	120
Ontario	53	52	60	1,372	1,435	1,572	1,559	1,550
Manitoba	118	119	180	2,547	2,480	3,300	2,780	2,480
askatchewan	289	328	440	5,680	5,600	6,900	6,152	5,712
Alberta	157	84	133	3,290	1,860	2,500	3,555	1,934
British Columbia	2	3	4	72	110	151	76	110
ring Rye	**98**	**88**	**106**	**1,573**	**1,460**	**1,958**	**1,714**	**1,500**
Manitoba	3	1	3	47	20	58	51	20
askatchewan	70	57	56	1,080	900	900	1,177	918
Alberta	26	30	47	446	540	1,000	485	562
Rye	**721**	**679**	**927**	**14,628**	**13,049**	**16,493**	**15,942**	**13,406**
Quebec	4	4	4	95	104	112	106	120
Ontario	53	52	60	1,372	1,435	1,572	1,559	1,550
Manitoba	121	120	183	2,593	2,500	3,358	2,831	2,500
askatchewan	358	385	496	6,760	6,500	7,800	7,330	6,630
Alberta	183	114	180	3,736	2,400	3,500	4,040	2,496
British Columbia	2	3	4	72	110	151	76	110
s	**59**	**53**	**73**	**1,261**	**1,022**	**1,280**	**2,815**	**2,486**
Quebec	2	2	1	33	35	34	137	122
Ontario	3	3	2	50	59	38	138	177
Manitoba	43	33	52	886	528	750	1,800	1,072
askatchewan	2	1	2	33	30	44	69	52
Alberta	8	13	13	209	325	354	564	975
British Columbia	2	2	2	49	45	60	106	88
ans	**91**	**91**	**90**	**2,032**	**1,621**	**1,951**	**8,948**	**8,092**
Quebec	1	1	1	19	16	18	85	67
Ontario	90	90	89	2,013	1,605	1,933	8,863	8,025
ybeans	**259**	**295**	**322**	**7,422**	**9,027**	**7,664**	**20,886**	**22,026**
Ontario	259	295	322	7,422	9,027	7,664	20,886	22,026
ckwheat	**59**	**81**	**100**	**1,163**	**1,376**	**1,695**	**1,499**	**2,035**
New Brunswick	2	2	3	77	91	100	93	103
Quebec	16	14	13	357	353	290	427	424
Ontario	15	15	14	375	402	332	435	474
Manitoba	26	50	50	353	530	650	545	1,034
askatchewan	—	—	10	—	—	171	—	—
Alberta	—	—	10	—	—	152	—	—
xed Grains	**1,615**	**1,667**	**1,740**	**76,112**	**85,602**	**87,346**	**68,250**	**73,094**
rince Edward Island	48	53	60	2,466	3,063	3,528	2,269	2,665

[1] Values for 1969 not available at time of going to press; see footnote [2], Table **11.**

12.—Acreages, Production and Values of Field Crops, by Province, 1968 and 1969, with Average for 1963-67—continued

Field Crop and Province	Area			Total Production			Gross Farm Valu	
	Average 1963-67	1968	1969	Average 1963-67	1968	1969	Average 1963-67	1968
	'000 acres	'000 acres	'000 acres	'000 bu.	'000 bu.	'000 bu.	$'000	$'000
Mixed Grains—concluded								
Nova Scotia	10	13	12	437	633	651	473	
New Brunswick	9	8	8	384	347	417	397	
Quebec	100	88	94	3,976	3,811	3,752	4,590	4,
Ontario	800	825	855	44,006	50,820	50,018	39,415	44,
Manitoba	152	178	190	5,669	7,700	7,100	4,943	5,
Saskatchewan	122	138	135	4,534	4,700	5,600	3,652	3,
Alberta	370	360	380	14,439	14,300	16,000	12,286	10,
British Columbia	4	5	6	200	228	280	225	
Flaxseed	**1,783**	**1,524**	**2,341**	**20,399**	**19,666**	**27,548**	**57,799**	**56,**
Quebec	26	16	17	377	256	192	1,111	
Ontario	18	6	3	286	101	46	787	
Manitoba	992	820	1,100	10,360	10,400	10,200	29,182	29,
Saskatchewan	442	397	770	5,340	4,600	10,800	15,170	13,
Alberta	304	285	450	4,020	4,300	6,300	11,501	12,
British Columbia	2	1	1	17	9	10	47	
Rapeseed	**1,170**	**1,052**	**2,012**	**18,938**	**19,400**	**33,400**	**44,595**	**35,**
Manitoba	118	91	196	1,806	1,900	3,500	4,262	3,
Saskatchewan	480	511	1,000	8,588	10,300	18,200	20,252	18,
Alberta	572	450	816	8,544	7,200	11,700	20,082	12,
				'000 lb.	'000 lb.	'000 lb.		
Sunflower Seed	**57**	**40**	**48**	**33,753**	**24,750**	**34,000**	**1,714**	**1,**
Manitoba	44	37	48	29,990	24,000	34,000	1,531	1,
Saskatchewan	10	2	—	2,647	600	—	131	
Alberta	..	1	—	..	150	—	..	
Mustard Seed	**156**	**533**	**267**	**119,040**	**469,000**	**258,000**	**5,495**	**21,**
Manitoba	26	65	37	18,060	55,000	30,000	927	2,
Saskatchewan	60	320	180	47,470	288,000	178,000	2,139	12,
Alberta	70	148	50	53,510	126,000	50,000	2,429	5,
				'000 bu.	'000 bu.	'000 bu.		
Shelled Corn	**727**	**958**	**978**	**57,787**	**81,168**	**73,390**	**77,233**	**100,**
Quebec	..	30	45		2,535	3,483	..	3,
Ontario	715	925	930	57,080	78,533	69,843	76,198	97,
Manitoba	5	2	3	172	100	64	233	
				'000 cwt.	'000 cwt.	'000 cwt.		
Potatoes	**296**	**303**	**306**	**48,120**	**52,883**	**51,859**	**100,208**	**86,**
Prince Edward Island	46	53	53	8,879	11,066	10,710	16,071	12,
Nova Scotia	6	5	4	825	612	691	1,787	1,
New Brunswick	58	61	62	12,151	13,785	13,206	20,944	14,
Quebec	72	70	68	8,585	9,716	7,698	18,153	19,
Ontario	51	45	46	9,413	8,604	8,531	20,957	16,
Manitoba	23	26	29	2,632	3,000	3,800	5,571	5,
Saskatchewan	9	8	7	702	700	573	1,909	1,
Alberta	23	24	27	3,007	3,300	4,500	8,495	7,
British Columbia	10	11	10	1,927	2,100	2,150	6,321	6,
				'000 tons	'000 tons	'000 tons		
Field Roots	**18**	**13**	**11**	**227**	**169**	**128**	**5,333**	**4,**
Prince Edward Island	2	1	2	32	20	20	677	
Nova Scotia	2	1	1	20	12	13	480	
New Brunswick	1	1	1	16	10	7	339	
Quebec	5	4	4	39	45	36	761	
Ontario	8	6	4	121	82	52	3,077	2,
Tame Hay	**12,802**	**12,438**	**12,606**	**23,554**	**23,034**	**25,577**	**430,464**	**426,**
Prince Edward Island	179	184	175	327	377	354	4,410	5,

[1] Values for 1969 not available at time of going to press; see footnote [2], Table **11.**

12.—Acreages, Production and Values of Field Crops, by Province, 1968 and 1969, with Average for 1963-67—concluded

Field Crop and Province	Area			Total Production			Gross Farm Value[1]	
	Average 1963-67	1968	1969	Average 1963-67	1968	1969	Average 1963-67	1968
	'000 acres	'000 acres	'000 acres	'000 tons	'000 tons	'000 tons	$'000	$'000
ame Hay—concluded								
Nova Scotia	224	214	207	473	407	381	7,668	7,021
New Brunswick	251	236	229	474	465	412	7,305	8,021
Quebec	3,363	3,345	3,300	6,057	6,590	7,029	109,928	108,406
Ontario	3,385	3,250	3,150	7,386	7,995	8,631	146,814	131,118
Manitoba	1,017	940	1,000	1,732	1,600	1,900	28,198	29,600
Saskatchewan	1,162	1,100	1,200	1,741	1,300	1,670	28,077	27,950
Alberta	2,786	2,740	2,900	4,353	3,200	4,000	75,507	79,040
British Columbia	434	429	445	1,011	1,100	1,200	22,558	29,700
odder Corn	**531**	**630**	**682**	**6,166**	**7,900**	**8,459**	**38,877**	**52,405**
Quebec	66	86	93	777	1,050	1,086	5,506	9,240
Ontario	415	500	550	5,047	6,500	6,985	30,828	40,300
Manitoba	39	30	23	235	168	157	1,599	1,176
Saskatchewan	6	6	5	22	17	20	266	204
British Columbia	5	9	11	85	165	211	677	1,485
igar Beets	**89**	**80**	**79**	**1,195**	**1,098**	**1,078**	**19,784**	**18,923**
Quebec	10	11	9	137	204	158	2,397	3,256
Ontario	15	—	—	260	—	—	3,942	—
Manitoba	27	29	31	273	298	343	4,494	4,769
Alberta	38	39	39	524	596	577	8,951	10,898

[1] Values for 1969 not available at time of going to press; see footnote [2], Table **11.**

13.—Acreages and Production of Grain in the Prairie Provinces, 1964-69

Grain	1964	1965	1966	1967	1968	1969
	Acreages					
	'000 acres	'000 acres	'000 acres	'000 acres	'000 acres	'000 acres
heat	29,080	27,790	29,166	29,570	28,860	24,400
ts	5,054	5,645	5,450	5,090	5,340	5,630
rley	5,217	5,741	7,010	7,600	8,330	9,000
ye	635	743	671	628	619	859
axseed	1,916	2,265	1,883	998	1,502	2,320
apeseed	791	1,435	1,525	1,620	1,052	2,012
	Production					
	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.
heat	578,000	632,000	807,000	574,000	629,000	665,000
ts	206,000	272,000	258,000	195,000	249,000	278,000
rley	157,000	202,000	283,000	230,000	301,000	355,000
ye	10,800	16,400	15,700	10,467	11,400	14,658
axseed	19,400	28,400	21,500	9,000	19,300	27,300
apeseed	13,230	22,600	25,800	24,700	19,400	33,400

Stocks of Canadian Grain.—Table **14** shows the stocks of Canadian grain on hand Canada and in the United States on July 31 for the years 1966-69, with averages for the ve-year periods 1956-60 and 1961-65. Stocks in Canada are separated into those in mmercial positions and those on farms. Stocks on farms and in country elevators in e Prairie Provinces are given separately.

14.—Carryover of Canadian Grain as at July 31, 1966-69, with Averages for 1956-60 and 1961-65

Grain and Year	Total in Canada and United States	Total in Canada	In Commercial Storage in Canada	On Farms in Canada	Prairie Provinces	
					On Farms	In Country Elevators
	bu.	bu.	bu.	bu.	bu.	bu.
Wheat—						
Av. 1956-60	629,832,600	629,604,393	413,411,393	216,193,000	213,200,000	243,626,58
Av. 1961-65	491,822,076	491,822,076	386,910,076	104,912,000	102,500,000	213,950,52
1966	420,122,308	420,122,308	320,122,308	100,000,000	98,000,000	179,518,50
1967	576,750,535	576,750,535	371,750,535	205,000,000	202,000,000	197,682,09
1968	665,509,981	665,509,981	429,509,981	236,000,000	233,000,000	255,324,99
1969	851,828,399	851,828,399	479,628,399	372,200,000	370,000,000	286,225,59
Oats—						
Av. 1956-60	143,608,599	143,423,558	41,563,558	101,860,000	82,000,000	28,041,58
Av. 1961-65	130,805,360	130,805,360	38,305,360	92,500,000	71,000,000	25,640,45
1966	127,162,973	127,162,973	36,162,973	91,000,000	67,000,000	20,176,64
1967	109,791,105	109,791,105	28,791,105	81,000,000	65,000,000	18,647,40
1968	76,950,747	76,950,747	21,950,747	55,000,000	42,000,000	10,792,04
1969	128,656,993	128,656,993	34,156,993	94,500,000	80,000,000	18,277,07
Barley—						
Av. 1956-60	126,302,926	126,179,881	62,390,881	63,789,000	61,600,000	39,661,16
Av. 1961-65	93,334,642	93,275,717	51,049,717	42,226,000	40,200,000	32,242,95
1966	97,752,538	97,752,538	64,752,538	33,000,000	31,000,000	44,347,24
1967	131,751,170	131,751,170	64,751,170	67,000,000	63,000,000	41,091,56
1968	130,916,502	130,916,502	59,616,502	71,300,000	68,000 000	42,015,03
1969	199,383,458	199,383,458	60,883,458	138,500,000	134,000,000	41,546,54
Rye—						
Av. 1956-60	10,831,575	10,585,171	3,992,171	6,593,000	6,250,000	2,070,48
Av. 1961-65	6,183,749	6,009,266	4,431,266	1,578,000	1,516,000	1,848,48
1966	10,566,888	10,215,040	7,815,040	2,400,000	2,400,000	2,949,69
1967	8,295,171	7,833,494	5,633,494	2,200,000	2,200,000	2,337,13
1968	7,457,779	7,259,779	5,359,779	1,900,000	1,900,000	2,278,89
1969	8,672,658	8,672,658	3,672,658	5,000,000	5,000,000	1,651,20
Flaxseed—						
Av. 1956-60	5,515,514	5,515,514	4,383,514	1,132,000	1,116,000	1,132,52
Av. 1961-65	6,105,756	6,105,756	4,937,756	1,168,000	1,160,000	1,618,99
1966	11,141,301	11,141,301	8,941,301	2,200,000	2,200,000	3,374,33
1967	11,830,585	11,830,585	10,330,585	1,500,000	1,500,000	3,121,80
1968	4,678,047	4,678,047	4,078,047	600,000	600,000	1,187,59
1969	4,908,606	4,908,606	4,108,606	800,000	800,000	1,496,91

Subsection 4.—Livestock and Poultry

Livestock.—The downward trend in the number of livestock on farms and the upwar trend in value per head, in evidence over the past few years, continued in 1969 as indicate in Table **15**. The only increase in that year over 1968 was in the number of hogs on farm which moved upward in all provinces except Quebec, Alberta and British Columbi Quebec reported some increase in number of milk cows in both 1968 and 1969, and Nov Scotia, Ontario and Saskatchewan showed slight increases in numbers of sheep.

Cattle marketings through commercial channels in 1969 decreased 4.2 p.c. from 196 calf marketings 10.4 p.c. and hog marketings 8.2 p.c. Sheep and lamb production conti ued downward, the decline in 1969 amounting to 19.6 p.c. However, offsetting the ove all reduction in production of livestock were the sharp rises in prices for all classes, regar less of grade, which produced an increase of 10 p.c. in sales revenue and brought the tot value of commercial marketings to $1,422,000,000, an all-time record. Most classes livestock were marketed at heavier weights and at somewhat better quality than in 196 Despite a very limited export trade throughout the year, the strength of the domest demand was such that supplies were never burdensome and good weekly clearances we generally the rule.

The all-markets average price received in 1969 for all classes and grades of cattle was 26.65, an amount $3.45 per cwt. higher than in 1968. Good feeder steers averaged $31.20, n increase of $4.50 over 1968, and good stock steer calves averaged $37.55, or $7.55 above 968. Hog carcasses averaged $57.40 against $46.35 in 1968; despite the reduction in narketings, the heavier weights at which hogs were slaughtered and the sharp increase in alue per head brought about $53,000,000 more than in the preceding year. The total alue of commercial marketings approximated $423,100,000, an all-time record. The eighted average price of good lambs for all Canada was $30.45 compared with $26.85 the previous year, an increase fairly representative of all trading centres.

The Canada Department of Agriculture inspects all livestock in plants designated as spected establishments under the Meat and Canned Foods Act. A record is kept of ese inspections and figures from 1960 are given in Table **16**. Local wholesale butcherings nd slaughterings carried out by retail butchers and by farmers for their own use are not cluded. Actually, the slaughtering and meat packing industry is concentrated in a mparatively small number of large establishments to facilitate greater efficiency and ilization of products; thus, the figures of Table **16** are fairly inclusive.

Additional information on livestock marketings is given in Chapter XXI, Pt. I, Sect. 2, nder the heading of "Livestock Marketings".

15.—Livestock on Farms and Average Value per Head, by Province, as at June 1, 1966-69

(Exclusive of Newfoundland and the Yukon and Northwest Territories)

Province and Item	Livestock on Farms				Average Value per Head			
	1966[1]	1967	1968	1969	1966[1]	1967	1968	1969
	'000	'000	'000	'000	$	$	$	$
ince Edward Island—								
Horses	5.0	4.5	4.2	4.0	140	143	146	154
Milk cows[2]	37.3	36.5	36.4	36.0	196	217	214	240
Other cattle	87.9	85.5	81.6	81.0	98	108	108	129
Sheep	15.1	14.5	12.2	11.0	16	19	20	21
Swine	82.9	95.0	88.0	94.0	36	33	26	34
va Scotia—								
Horses	5.7	5.5	5.2	4.8	192	189	195	211
Milk cows[2]	52.4	50.0	48.0	47.0	186	203	213	231
Other cattle	95.2	96.0	96.0	94.0	102	111	116	133
Sheep	38.8	38.0	39.0	41.0	15	17	18	18
Swine	57.5	65.0	70.0	71.0	35	33	30	33
ew Brunswick—								
Horses	6.1	5.8	5.4	5.0	212	211	225	234
Milk cows[2]	52.2	48.5	47.0	45.0	180	189	201	212
Other cattle	84.3	82.5	83.0	83.0	98	109	115	124
Sheep	28.2	27.0	27.0	25.0	16	17	17	20
Swine	34.1	41.0	49.0	52.0	33	33	30	35
uebec—								
Horses	62.1	57.0	53.0	49.0	208	226	226	228
Milk cows[2]	995.3	1,004.0	1,023.0	1,043.0	200	227	240	253
Other cattle	802.3	792.0	824.0	852.0	90	100	105	116
Sheep	112.4	106.0	99.0	101.0	16	16	18	20
Swine	1,173.7	1,330.0	1,160.0	1,115.0	33	32	27	34
ntario—								
Horses	75.4	74.0	76.0	70.0	180	191	199	202
Milk cows[2]	908.7	925.0	905.0	895.0	249	282	293	310
Other cattle	2,228.3	2,240.0	2,315.0	2,309.0	138	150	152	176
Sheep	265.4	259.0	252.0	262.0	22	22	24	27
Swine	1,935.6	2,040.0	1,995.0	2,010.0	40	33	30	41

For footnotes, see end of table, p. 584.

15.—Livestock on Farms and Average Value per Head, by Province, as at June 1, 1966-69
—concluded

Province and Item	Livestock on Farms				Average Value per Head			
	1966[1]	1967	1968	1969	1966[1]	1967	1968	1969
	'000	'000	'000	'000	$	$	$	$
Manitoba—								
Horses	37.0	37.0	38.0	36.0	121	124	123	122
Milk cows[2]	150.1	142.0	133.0	123.0	204	224	230	283
Other cattle	1,001.1	970.0	904.0	896.0	136	145	147	187
Sheep	50.5	46.0	41.0	41.0	17	18	19	22
Swine	499.2	578.0	526.0	612.0	34	31	28	37
Saskatchewan—								
Horses	74.7	69.0	65.0	62.0	110	118	117	123
Milk cows[2]	153.8	145.0	127.0	117.0	216	227	226	283
Other cattle	2,244.2	2,223.0	2,096.0	2,063.0	144	152	153	197
Sheep	127.8	120.0	118.0	126.0	19	18	18	21
Swine	488.2	565.0	508.0	580.0	33	30	28	36
Alberta—								
Horses	93.7	90.0	85.0	84.0	120	132	131	143
Milk cows[2]	243.0	235.0	215.0	200.0	217	235	232	283
Other cattle	3,196.7	3,170.0	3,107.0	3,061.0	140	151	149	193
Sheep	301.4	287.0	245.0	218.0	19	17	19	2
Swine	1,092.7	1,254.0	1,245.0	1,220.0	35	30	27	36
British Columbia—								
Horses	26.5	27.0	28.0	26.5	144	159	165	17
Milk cows[2]	81.1	82.0	82.0	78.0	234	253	255	29
Other cattle	464.9	454.0	443.0	444.0	134	144	142	17
Sheep	65.9	65.0	58.0	58.0	19	21	22	2
Swine	37.4	44.0	41.0	38.0	38	33	30	3
Totals—								
Horses	**386.2**	**369.8**	**359.8**	**341.3**	**118**	**159**	**161**	**16**
Milk cows[2]	**2,673.9**	**2,668.0**	**2,616.1**	**2,581.0**	**220**	**246**	**255**	**27**
Other cattle	**10,201.9**	**10,113.0**	**9,949.6**	**9,883.0**	**134**	**145**	**146**	**18**
Sheep	**1,005.5**	**962.5**	**891.2**	**883.0**	**19**	**19**	**20**	**2**
Swine	**5,401.3**	**6,012.0**	**5,682.0**	**5,792.0**	**36**	**32**	**28**	**3**

[1] Census figures. [2] Cows and heifers, two years old or over, kept for milk purposes.

16.—Livestock Slaughtered at Inspected Establishments, 1960-69

(Exclusive of Newfoundland)

Year	Cattle	Calves	Sheep	Hogs
	No.	No.	No.	No.
1960	1,941,703	712,100	562,678	6,182,31
1961	2,041,473	690,286	633,347	5,849,87
1962	2,028,159	710,229	567,463	6,031,93
1963	2,126,716	671,390	532,015	5,909,50
1964	2,422,260	750,319	497,686	6,627,60
1965	2,734,514	894,728	409,783	6,421,22
1966	2,705,139	765,596	327,621	6,129,63
1967	2,641,788	738,815	325,468	7,336,91
1968	2,784,379	668,411	282,632	7,423,75
1969	2,718,567	580,148	212,751	6,973,19

Poultry.—Poultry on farms and their values in 1967-69 are given in Table **17**; produ tion and consumption of poultry meat are shown in Table **18.**

17.—Numbers and Values of Poultry on Farms, by Province, as at June 1, 1967-69

Province and Year	Hens and Chickens		Turkeys		Geese		Ducks		All Poultry	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
	'000	$'000	'000	$'000	'000	$'000	'000	$'000	'000	$'000
ewfoundland	..	..	..	..	..	..	..	..	..	..
rince Edward Island 1967	334	405	4	25	5	19	3	6	346	455
1968	313	401	3	15	4	17	3	7	323	440
1969	322	457	3	16	5	23	2	5	332	501
ova Scotia 1967	2,724	3,183	67	308	2	6	1	2	2,793	3,499
1968	2,605	3,539	70	305	1	5	1	3	2,677	3,852
1969	2,842	4,072	80	408	1	5	1	3	2,924	4,488
ew Brunswick 1967	1,354	1,524	51	252	1	4	1	2	1,407	1,782
1968	1,403	1,769	43	150	1	4	1	2	1,448	1,925
1969	1,545	2,191	20	102	1	3	1	3	1,567	2,299
uebec 1967	19,985	20,164	1,540	7,269	7	25	59	123	21,591	27,581
1968	20,100	22,936	1,530	6,682	8	31	59	121	21,697	29,770
1969	22,130	30,549	1,800	9,324	7	26	60	135	23,997	40,034
ntario 1967	27,350	29,517	3,800	17,366	57	215	126	247	31,333	47,345
1968	25,600	31,482	3,600	15,891	60	252	132	314	29,392	47,939
1969	27,480	39,852	3,800	19,380	60	246	138	333	31,478	59,811
anitoba 1967	6,330	5,595	925	3,737	135	444	30	57	7,420	9,833
1968	6,380	6,389	870	4,168	135	463	30	60	7,415	11,080
1969	7,340	8,657	825	3,680	150	532	30	64	8,345	12,933
askatchewan 1967	5,750	4,148	670	2,854	40	149	70	149	6,530	7,300
1968	5,140	5,087	550	2,865	45	176	70	157	5,805	8,285
1969	5,440	6,198	500	2,450	40	176	70	176	6,050	9,000
lberta 1967	8,400	6,713	1,100	5,016	80	283	85	182	9,665	12,194
1968	7,940	7,895	1,040	5,645	80	294	85	181	9,145	14,015
1969	8,600	10,245	850	4,318	70	286	80	198	9,600	15,047
ritish Columbia 1967	7,925	8,617	600	3,174	10	40	22	50	8,557	11,881
1968	7,390	9,389	550	3,039	10	43	22	53	7,972	12,524
1969	7,570	10,686	580	3,283	9	39	21	54	8,180	14,062
Totals 1967	**80,152**	**79,866**	**8,758**	**40,001**	**336**	**1,185**	**396**	**818**	**89,642**	**121,870**
1968	**76,871**	**88,887**	**8,256**	**38,760**	**344**	**1,285**	**403**	**898**	**85,874**	**129,830**
1969	**83,269**	**112,907**	**8,458**	**42,961**	**343**	**1,336**	**403**	**971**	**92,473**	**158,175**

18.—Production and Domestic Disappearance of Poultry Meat, 1967-69

(Eviscerated weight)

Year and Item	Net Production	Total Supply	Domestic Disappearance	Per Capita Consumption
	'000 lb.	'000 lb.	'000 lb.	lb.
1967				
owl and chickens	597,340	632,032	608,301	29.8
urkeys	207,639	244,077	212,076	10.4
eese	3,740	3,978	3,825	0.2
ucks	4,953	7,012	6,624	0.3
Totals, 1967	**813,672**	**887,099**	**830,826**	**40.7**
1968				
owl and chickens	597,367	630,904	611,270	29.4
urkeys	200,372	236,477	202,692	9.8
eese	3,703	3,773	3,719	0.2
ucks	5,189	6,889	6,532	0.3
Totals, 1968	**806,631**	**878,043**	**824,213**	**39.7**
1969				
owl and chickens	684,712	709,204	683,984	32.4
urkeys	202,137	236,893	210,188	10.0
eese	3,391	3,443	3,205	0.2
ucks	4,903	6,524	6,015	0.3
Totals, 1969	**895,143**	**956,061**	**903,392**	**42.8**

Subsection 5.—Dairying

The numbers of dairy cattle on farms have generally been declining gradually fo many years; Quebec is the exception among the provinces in this respect, having increase its stock of milk cows by nearly 50,000 in the 1966-69 period. Despite the over-all decreas in numbers, the total milk production in Canada has been kept at a fairly static level by a increased output per cow. Production is concentrated in Central Canada, the province of Quebec and Ontario accounting for about 74 p.c. of the total quantity. Of the tota output in 1969, 65 p.c. was used for factory-made dairy products, 27 p.c. was sold in flui form and 8 p.c. was used for all purposes on farms.

19.—Production and Utilization of Milk, by Province, 1967-69

Province and Year	Milk Used in Manufacture		Milk Otherwise Used			Total Milk Productio
	On Farms[1]	In Factories	Fluid Sales	Farm-Home Consumed	Fed on Farms	
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Newfoundland	..	..	..	..	..	..
Prince Edward Island 1967	749	169,257	19,801	19,410	6,775	215,99
1968	772	161,493	19,087	18,960	6,928	207,2
1969	562	171,981	18,211	18,990	7,126	216,8
Nova Scotia 1967	2,808	105,915	203,178	22,710	10,689	345,3
1968	2,831	94,262	201,661	22,300	10,266	331,3
1969	2,714	111,199	199,671	21,830	10,227	345,6
New Brunswick 1967	3,885	128,588	150,686	22,050	7,218	312,4
1968	3,908	115,421	142,871	20,630	7,362	290,1
1969	3,557	122,879	136,440	20,750	7,585	291,2
Quebec 1967	6,950	4,733,875	1,427,223	206,500	189,350	6,563,8
1968	6,786	4,980,810	1,358,817	206,300	180,220	6,732,9
1969	6,412	5,475,024	1,312,294	201,300	180,930	7,175,9
Ontario 1967	6,950	4,107,255	2,080,883	186,000	264,900	6,645,9
1968	6,646	4,106,616	2,094,265	184,700	261,600	6,653,8
1969	6,388	4,070,149	2,102,886	178,300	257,100	6,614,8
Manitoba 1967	6,669	468,076	244,962	82,040	48,790	850,5
1968	6,178	479,264	241,179	82,100	50,870	859,5
1969	5,803	483,363	233,750	77,380	50,980	851,2
Saskatchewan 1967	20,311	392,457	196,522	151,900	51,370	812,5
1968	19,445	385,910	193,839	151,800	51,870	802,8
1969	18,743	388,499	188,799	149,900	51,900	797,8
Alberta 1967	22,885	961,271	351,124	134,260	96,350	1,565,8
1968	22,019	950,289	355,503	133,300	94,630	1,555,7
1969	20,382	888,446	365,783	129,180	96,910	1,500,7
British Columbia 1967	2,831	318,416	527,095	22,290	24,760	895,3
1968	2,574	355,524	522,166	22,000	25,610	927,8
1969	2,574	323,621	529,997	20,890	26,680	903,7
Totals 1967	**74,038**	**11,385,110**	**5,201,474**	**847,160**	**700,202**	**18,207,**
1968	**71,159**	**11,629,589**	**5,129,388**	**842,090**	**689,356**	**18,361,**
1969	**67,135**	**12,035,161**	**5,087,831**	**818,520**	**689,438**	**18,698,**

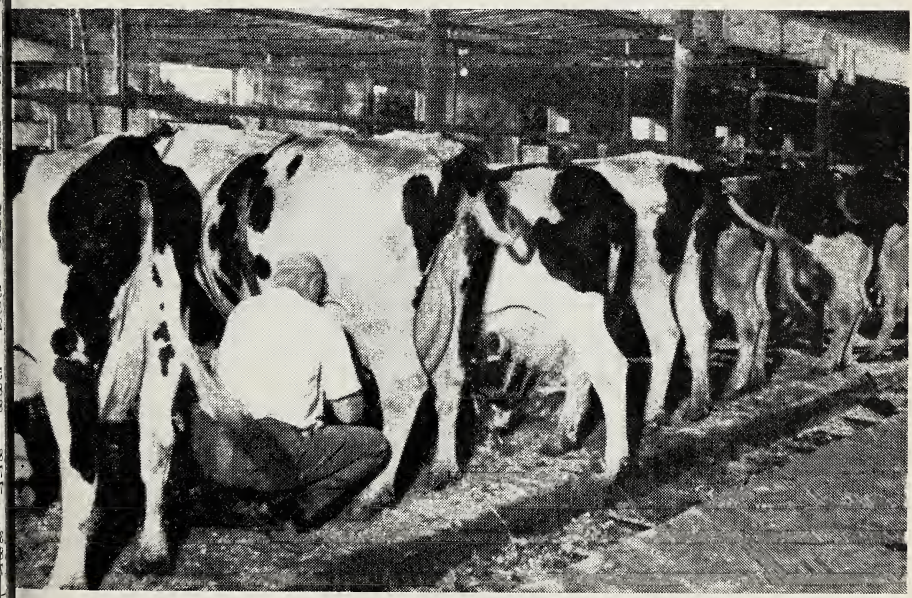
[1] Used in farm butter only.

The farm value of milk production in Canada for 1969 was $742,631,000, 4.5 p.c. gher than in 1968. The value of milk used in factories in 1969 was $374,153,000 (65 p.c. the total milk production) and fluid sales, $302,679,000 (27 p.c. of the total).

The 350,000,000 lb. of creamery butter produced in 1969 accounted for 43.8 p.c. of the tional milk output, and was 4.2 p.c. higher than in 1968. Per capita consumption was 5.28 lb., three quarters of a pound lower than in 1968. Quebec is the largest producer of eamery butter, having accounted for nearly half of the total output in 1969; Ontario llowed with 28 p.c.

Both output and consumption of cheese have been gradually increasing during the st few years. The total production of factory cheese (Table **21**) for 1969 was 207,000,000 . compared with 199,000,000 lb. for 1968, and per capita consumption of all varieties of eese, excluding cottage cheese, was 11.19 lb., compared with 10.34 lb. for 1968. Exports all cheese, mostly cheddar, amounted to 35,958,000 lb. in 1969, compared with 44,261,000 . in 1968. Of the total output of factory cheese in 1969, Ontario accounted for 52 p.c. d Quebec for 41 p.c.

There has been a generally decreasing trend in the output of concentrated whole milk oducts, including condensed milk, evaporated milk, whole milk powder, partly skimmed aporated milk and others, but the production of concentrated milk byproducts has oved upward during the past few years. The latter category comprises condensed skim ilk, evaporated skim milk, skim milk powder, powdered buttermilk, whey powder, casein d other milk byproducts, but by far the major component is skim milk powder which counts for over 80 p.c. of the total production. Thus, the recent rise in output of con- ntrated milk byproducts was mainly attributed to this commodity, production of which creased from 222,155,000 lb. in 1965 to 394,558,000 lb. in 1969.



Milking time for Holstein-Friesians on a dairy farm. Since 1881, Canadian breeders have been improving the already excellent characteristics of the Holstein-Friesian. The average performance of the breed in Canada is 12,243 lb. of milk and 457 lb. of butterfat in 305 days. In health and productive efficiency, Canadian dairy cattle form one of the major world sources of breeding stock.

20.—Farm Values of Milk Production, by Province, 1967-69

Province and Year	Value of Milk Used in Manufacture		Value of Milk Otherwise Used			Value of Total Milk Production
	On Farms[1]	In Factories	Fluid Sales	Farm-Home Consumed	Fed on Farms[2]	
	$'000	$'000	$'000	$'000	$'000	$'000
Newfoundland	..	..	..	..	..	..
Prince Edward Island 1967	20	4,377	952	586	797	6,732
1968	21	4,124	982	586	773	6,486
1969	15	4,471	997	591	809	6,883
Nova Scotia 1967	70	2,807	11,365	677	527	15,446
1968	73	2,639	12,272	687	480	16,151
1969	71	3,140	12,900	679	505	17,293
New Brunswick 1967	103	3,082	8,090	686	710	12,671
1968	105	2,798	8,064	652	653	12,272
1969	97	3,003	7,776	660	683	12,219
Quebec 1967	190	149,798	75,323	6,298	10,854	242,463
1968	188	159,441	73,207	6,808	10,696	250,340
1969	181	180,788	75,574	6,864	10,878	274,283
Ontario 1967	181	127,411	113,682	5,338	12,291	258,903
1968	173	128,990	119,775	5,947	12,694	267,579
1969	169	128,999	126,491	5,795	12,214	273,669
Manitoba 1967	177	10,651	12,010	2,141	2,995	27,974
1968	164	10,824	12,247	2,176	3,051	28,463
1969	159	11,098	12,447	2,051	3,001	28,756
Saskatchewan 1967	521	8,706	10,256	4,010	2,960	26,453
1968	507	8,524	10,231	4,053	2,955	26,270
1969	489	8,721	10,507	4,047	2,970	26,734
Alberta 1967	577	23,713	18,096	3,706	5,924	52,016
1968	555	25,018	18,894	4,466	6,398	55,331
1969	531	23,720	19,602	4,340	6,191	54,384
British Columbia 1967	68	10,413	33,577	883	1,072	46,013
1968	62	11,252	34,829	759	1,000	47,902
1969	64	10,213	36,385	723	1,022	48,407
Totals 1967	**1,907**	**340,953**	**283,351**	**24,325**	**38,130**	**688,676**
1968	**1,848**	**353,610**	**290,501**	**26,134**	**38,700**	**710,795**
1969	**1,776**	**374,153**	**302,679**	**25,750**	**38,273**	**742,631**

[1] Used in farm butter only. [2] Includes values of skim milk and buttermilk retained on farms.

21.—Production of Butter and Cheese, by Province, 1967-69

Province and Year	Butter				Cheese
	Creamery	Dairy	Whey	Total	Factory
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Newfoundland	..	..	..	..	..
Prince Edward Island 1967	4,602	32	64	4,698	2,350
1968	4,342	33	58	4,433	1,990
1969	4,572	24	63	4,659	2,363
Nova Scotia 1967	2,502	120	—	2,622	1,244
1968	2,035	121	—	2,156	1,203
1969	2,580	116	—	2,696	1,553
New Brunswick 1967	4,424	166	—	4,590	583
1968	3,827	167	—	3,994	563
1969	4,124	152	—	4,276	503
Quebec 1967	149,167	297	2,050	151,514	73,433
1968	154,236	290	2,495	157,021	82,900
1969	173,402	274	2,459	176,135	84,583

For footnote, see end of table.

21.—Production of Butter and Cheese, by Province, 1967-69—concluded

Province and Year	Butter				Cheese
	Creamery	Dairy	Whey	Total	Factory[1]
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
tario 1967	98,248	297	3,231	101,776	104,532
1968	100,173	284	3,382	103,839	105,209
1969	98,290	273	3,211	101,774	108,950
nitoba 1967	17,071	285	—	17,356	2,118
1968	17,656	264	—	17,920	2,004
1969	17,119	248	—	17,367	3,235
skatchewan 1967	16,256	868	—	17,124	—
1968	15,946	831	—	16,777	—
1969	15,970	801	—	16,771	—
berta 1967	33,396	978	3	34,377	3,249
1968	32,040	941	6	32,987	3,457
1969	29,527	871	7	30,405	3,013
itish Columbia 1967	4,233	121	—	4,354	1,418
1968	5,641	110	—	5,751	1,713
1969	4,261	110	—	4,371	1,826
Totals 1967	**329,899**	**3,164**	**5,348**	**338,411**	**189,259**[2]
1968	**335,896**	**3,041**	**5,941**	**344,878**	**199,477**[2]
1969	**349,845**	**2,869**	**5,740**	**358,454**	**206,576**[2]

[1] Factory-made cheese includes cheddar and other cheese made from whole milk and cream. [2] Amounts "other cheese" are included in Quebec, Ontario and Alberta figures, but, as fewer than three firms reported in e other provinces, data cannot be included except in the Canada total.

22.—Production of Concentrated Milk Products, 1965-69

(Exclusive of Newfoundland)

Product	1965	1966	1967	1968	1969
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
ncentrated Whole Milk Products	**377,275**	**363,018**	**338,687**	**343,836**	**322,808**
Condensed milk	19,251	22,788	23,835	25,951	21,593
Evaporated milk	310,136	309,696	288,107	296,618	281,881
Whole milk powder	21,947	7,732	8,352	3,932	2,931
Partly skimmed evaporated milk	15,136	14,153	11,778	9,660	7,926
Whole milk products[1]	10,805	8,649	6,615	7,675	8,477
ncentrated Milk Byproducts	**328,892**	**373,546**	**420,944**	**467,383**	**497,474**
Condensed skim milk	1,232	2,054	1,306	1,198	1,460
Evaporated skim milk	7,494	8,455	10,662	14,297	13,641
Skim milk powder	222,155	263,508	316,131	360,376	394,558
Powdered buttermilk	9,141	9,123	10,503	12,514	13,056
Whey powder	41,884	42,485	40,096	43,468	42,573
Casein	23,153	24,440	15,854	13,176	11,155
Other milk byproducts[2]	23,833	23,481	26,392	22,354	21,031
Totals	**706,167**	**736,564**	**759,631**	**811,219**	**820,282**

[1] Includes malted milk, cream powder, formula milks, whole milk powder of less than 26-p.c. fat, evaporated ilk of 2-p.c. fat and concentrated liquid milk manufactured by fewer than three firms. [2] Includes sugar of ilk (lactose), condensed buttermilk, concentrated liquid skim milk lactalbumin and special formula skim milk oducts manufactured by fewer than three firms.

23.—Production of Ice Cream Mix, by Province, 1967-69

Province	1967	1968	1969	Province	1967	1968	1969
	'000 gal.	'000 gal.	'000 gal.		'000 gal.	'000 gal.	'000 gal.
ewfoundland	..	..	..	Manitoba	1,614	1,598	1,639
rince Edward Island	186	190	200	Saskatchewan	1,333	1,331	1,330
ova Scotia	1,182	1,274	1,265	Alberta	2,837	2,660	2,856
ew Brunswick	810	812	828	British Columbia	3,145	3,238	3,329
uebec	7,693	7,431	7,724				
ntario	9,347	9,363	9,900	**Totals**	**28,147**	**27,897**	**29,071**

As indicated in Table 24, the estimated total consumption of fluid milk and crean on a milk basis, has decreased slightly over the past three years and the per capita con sumption has continued the slow decline in evidence over the past two decades. In fact total and per capita domestic disappearance of all dairy products, as shown in Table 25 is also gradually decreasing.

24.—Estimated Consumption of Milk and Cream (expressed as Milk), by Province, 1967-69

Province and Year	Estimated Consumption	Daily per Capita Consumption	Province and Year	Estimated Consumption	Daily per Capita Consumption
	'000 pt.	pt.		'000 pt.	pt.
Newfoundland	..	..	Manitoba 1967	253,490	0.72
			1968	250,604	0.71
Prince Edward Island 1967	30,397	0.76	1969	241,187	0.67
1968	29,494	0.73			
1969	28,838	0.72	Saskatchewan 1967	270,095	0.77
			1968	267,937	0.76
Nova Scotia 1967	175,107	0.63	1969	262,558	0.75
1968	173,613	0.63			
1969	171,706	0.62	Alberta 1967	376,267	0.69
			1968	378,917	0.68
New Brunswick 1967	133,904	0.59	1969	383,693	0.67
1968	126,745	0.56			
1969	121,852	0.53	British Columbia 1967	425,880	0.60
			1968	421,834	0.57
Quebec 1967	1,266,452	0.59	1969	427,044	0.56
1968	1,213,270	0.56			
1969	1,173,328	0.54			
			Totals 1967	**4,688,866**	**0.64**
Ontario 1967	1,757,274	0.67	**1968**	**4,629,053**	**0.63**
1968	1,766,639	0.66	**1969**	**4,578,568**	**0.61**
1969	1,768,362	0.65			

25.—Domestic Disappearance of Dairy Products, 1967-69

Product	1967		1968		1969	
	Total	Per Capita[1]	Total	Per Capita[1]	Total	Per Capita[1]
	'000 lb.	lb.	'000 lb.	lb.	'000 lb.	lb.
Milk and Cream	**6,048,634**	**303.34**	**5,971,478**	**294.68**	**5,906,351**	**287.06**
Milk	5,150,331	258.29	5,082,944	250.83	5,033,976	244.66
Cream as milk	898,303	45.05	888,534	43.85	872,375	42.40
Butter	**345,587**	**16.91**	**342,005**	**16.47**	**330,973**	**15.69**
Creamery	336,982	16.49	333,110	16.04	322,307	15.28
Dairy	3,164	0.15	3,041	0.15	2,869	0.14
Whey	5,441	0.27	5,854	0.28	5,797	0.27
Cheese	**200,465**	**9.81**	**214,758**	**10.34**	**236,074**	**11.19**
Cheddar	68,309	3.34	69,192	3.33	75,616	3.58
Process	84,728	4.14	90,164	4.34	96,729	4.59
Other	47,428	2.33	55,402	2.67	63,729	3.02
Concentrated Whole Milk Products[2]	**337,537**	**16.51**	**331,676**	**15.97**	**308,292**	**14.62**
Evaporated	289,825	14.18	285,649	13.75	267,831	12.70
Condensed	24,325	1.19	25,619	1.23	21,160	1.00
Powdered	4,684	0.23	3,108	0.15	2,550	0.12
Concentrated Milk Byproducts[3]	**234,639**	**11.48**	**255,632**	**12.30**	**309,524**	**14.68**
Evaporated	10,575	0.52	14,330	0.69	13,754	0.65
Condensed	1,279	0.06	1,206	0.06	1,456	0.07
Powdered	139,571	6.83	161,806	7.79	211,504	10.03
All Dairy Products in Terms of Milk—						
Butter	**7,959,417**	**389.38**	**7,865,933**	**378.68**	**7,609,119**	**360.81**
Cheese	**1,952,102**	**95.50**	**2,092,573**	**100.74**	**2,308,947**	**109.49**
Concentrated	**794,539**	**38.87**	**769,454**	**37.04**	**710,615**	**33.70**
Grand Totals[4]	**17,491,092**	**863.12**	**17,442,302**	**846.90**	**17,330,933**	**828.86**

[1] Includes Newfoundland for all manufactured dairy products. [2] Includes, in addition to the items listed malted milk, cream powder, partly skimmed evaporated milk, whole milk powder of less than 26-p.c. fat, formul milks, evaporated milk of 2-p.c. fat, and concentrated liquid milk. [3] Includes, in addition to the items listed condensed buttermilk, powdered buttermilk, sugar of milk, casein, powdered whey, special formula skim mil products, lactalbumin and concentrated liquid skim milk. Since the quantities used for human consumption an livestock feeding cannot be separated, per capita figures include both. [4] Includes ice cream mix in terms o milk.

Subsection 6.—Fruits, Vegetables and Other Farm Products

Fruits.—Commercial fruit growing in Canada is confined almost exclusively to rather nited areas in the Provinces of Nova Scotia, New Brunswick, Quebec, Ontario and British olumbia. Nova Scotia production is centred mainly in the Annapolis Valley and New runswick production in the St. John River Valley and Westmorland County. In Quebec e fruit growing districts are the Montreal area, the North Shore area, the Eastern Town-ips and the Quebec City district. Ontario fruit is grown in all the counties adjacent to e St. Lawrence River and the Great Lakes as far west as Georgian Bay, the Niagara strict being the most productive. In British Columbia the four well-defined fruit areas e the Okanagan Valley, the Fraser Valley, the Kootenay and Arrow Lakes district and ancouver Island. The climate elsewhere in Canada is not generally suitable for commer-al tree-fruit culture. Apples and small fruits are produced commercially in the provinces amed but tender tree fruits and commercial vineyards are largely limited to Ontario and ritish Columbia.

By far the most valuable fruit crop produced in Canada is apples and in 1968 the farm alue for this crop was $39,947,000. The main outlet for Canadian apples is the fresh arket which absorbs about 70 p.c. of the production each year and the volume of apples for rocessing is about 30 p.c. of production. In Nova Scotia nearly 70 p.c. of the crop is rocessed; lesser quantities are processed in other producing provinces.

Strawberries are grown commercially in all provinces for which tree-fruit statistics are epared, as well as in Prince Edward Island, but are produced over a somewhat wider area an are tree fruits. Raspberries are grown commercially in Nova Scotia, New Brunswick d Quebec but the bulk of the crop is produced in Ontario and British Columbia. The raser Valley of British Columbia is the most important producing area. Wild blueberries

Some 300 high school students from a nearby city help with the strawberry harvest on an Ontario farm. Many berries are sold as fresh fruit but much of the crop goes to commercial processors to be frozen, canned or made into jams and jellies. In 1969, 22,959 tons of strawberries were harvested across the country.

are harvested on a commercial scale in Newfoundland, Prince Edward Island, Nova Scoti New Brunswick and Quebec. This crop is indigenous to certain areas in these provinc and a large percentage of the crop is frozen and exported. There is also some productic of cultivated blueberries, particularly in British Columbia.

A marketing system has been developed for distributing fresh fruit from the specializ production areas to all parts of the country and a large proportion of the deciduous fru consumed in Canada is grown domestically. Considerable quantities of apples, straw berries and blueberries are exported. Canning and processing industries have develope in the fruit growing districts and, although the importance of the processing market vari with different fruits, it provides a valuable outlet for substantial proportions of mo Canadian-grown fruit crops.

Tables 26 and 27 show the estimated commercial production of fruit, by provin and by kind, for 1967-69.

26.—Value of Commercial Fruit Produced, by Province, 1967-69, with Average for 1962-66

(Farm value for unpacked fruit)

Province	Average 1962-66	1967	1968	1969
	$'000	$'000	$'000	$'000
Newfoundland	295	325	148	254
Prince Edward Island	359	455	333	573
Nova Scotia	4,403	5,157	4,108	5,765
New Brunswick	1,576	1,850	1,609	2,040
Quebec	10,621	9,121	13,018	10,112
Ontario	28,213	33,040	36,292	39,601
British Columbia	22,772	31,364	31,563	19,148
Totals	**68,239**	**81,312**	**87,071**	**77,493**

27.—Estimated Commercial Production and Farm Value of Fruit, 1967-69

Kind of Fruit and Year	Quantity	Weight	Farm Value	Kind of Fruit and Year	Quantity	Weight	Farm Value
	'000 bu.	'000 lb.	$'000		'000 bu.	'000 lb.	$'000
Apples—				Peaches—			
1967	21,840	982,800	36,557	1967	1,646	82,300	7,20
1968	20,081	903,648	39,947	1968	1,946	97,300	8,95
1969	21,728	977,762	..	1969	1,660	83,000	..
Apricots—				Pears—			
1967	132	6,600	343	1967	1,753	87,650	4,81
1968	144	7,200	491	1968	1,694	84,700	5,06
1969	9	450	..	1969	1,080	54,000	..
Cherries (sour)—				Plums and Prunes—			
1967	455	22,750	3,300	1967	471	23,550	1,36
1968	322	16,100	2,821	1968	384	19,200	1,41
1969	411	20,550	..	1969	316	15,800	..
Cherries (sweet)—				Raspberries—	'000 qt.		
1967	532	26,600	4,193	1967	13,980	20,344	3,47
1968	334	16,700	3,606	1968	10,423	15,134	3,54
1969	303	15,150	..	1969	11,479	16,648	..
Strawberries—	'000 qt.			Grapes—	'000 lb.		
1967	32,909	43,880	8,780	1967	138,178	138,178	7,19
1968	33,088	44,060	9,778	1968	121,789	121,789	7,58
1969	27,774	35,564	..	1969	124,174	124,174	..
Loganberries—	'000 lb.			Blueberries			
1967	1,608	1,608	265	1967	31,133	31,133	3,42
1968	1,600	1,600	276	1968	15,782	15,782	3,05
1969	1,216	1,216	..	1969	27,700	27,700	..

Vegetables.—Estimates of acreage and production of commercial vegetables in anada are prepared for all provinces except Newfoundland and Saskatchewan. Ontario the largest producer, followed by Quebec and British Columbia. A wide variety of crops grown in these three provinces and a somewhat smaller range in the Maritimes and in the rairie Provinces.

Canning, freezing and processing of vegetables are carried on in the important produc- g areas. The estimates in the following tables cover output of commercial growers for rocessing and for sale on the fresh market but do not include averages or production of egetables grown for home use on farms and elsewhere.

28.—Estimated Commercial Acreage of Vegetables, by Province, 1967-69, with Average for 1962-66

Province	Average 1962-66	1967	1968	1969
	acres	acres	acres	acres
rince Edward Island	..	220	460	600
ova Scotia	5,830	12,090	12,510	10,080
ew Brunswick	7,220	1,300	1,240	1,270
uebec	77,220	84,430	84,930	85,520
ntario	110,160	111,350	117,470	108,470
anitoba[1]	3,580	3,230	3,550	3,500
lberta[1]	15,350	2,370	7,230	4,760
ritish Columbia	15,300	15,520	18,420	16,010
Totals	**234,660**	**230,510**	**245,810**	**230,210**

[1] Acreages of beans, corn and peas in Manitoba are included with Alberta.

29.—Estimated Commercial Acreage and Production of Vegetables, 1967-69, with Average for 1962-66

Vegetable	Average 1962-66		1967		1968		1969	
	Area	Production	Area	Production	Area	Production	Area	Production
	acres	'000 lb.	acres	'000 lb.	acres	'000 lb.	acres	'000 lb.
sparagus	3,960	6,170	3,470	5,081	3,030	4,963	2,960	5,239
eans	23,980	88,900	27,380	107,197	22,850	92,200	22,480	88,852
eets[1]	2,820	51,480	2,540	40,829	3,030	55,337	2,790	44,484
abbage[1]	7,000	136,060	6,680	135,159	7,010	146,847	7,010	138,539
arrots[1]	14,060	351,460	13,790	355,060	15,830	387,619	16,300	395,623
auliflower[1]	3,080	34,890	3,340	37,281	3,550	34,554	4,030	42,635
elery	1,100	41,940	1,100	36,618	1,170	43,717	1,040	37,312
orn[1]	54,810	397,770	54,670	413,797	62,560	494,833	40,420	394,912
ucumbers	10,520	77,420	9,020	88,623	11,030	122,880	57,630	130,604
ettuce[1]	4,880	56,450	4,860	56,459	5,110	63,196	5,030	52,475
nions	9,490	239,150	9,420	224,627	9,810	271,001	10,090	226,060
arsnips[1]	660	12,240	440	8,064	530	12,823	560	9,343
eas	55,010	134,950	51,150	113,910	59,660	176,899	52,820	120,528
inach	1,100	11,450	880	6,544	1,000	9,601	980	6,057
omatoes[1]	32,720	786,680	33,020	822,680	30,580	747,442	28,300	572,126
urnips	9,540	217,730	8,750	240,468	9,060	247,076	7,750	170,302

[1] Prince Edward Island figures not included before 1965.

Tobacco.—Canada produces several types of leaf tobacco but by far the most im- ortant is the flue-cured or Bright Virginia type. This is grown mainly in Ontario, along ith considerable quantities of burley and smaller amounts of dark (air-cured and fire-

cured) tobacco. Quebec produces smaller quantities of these types as well as some cig and pipe tobacco and small flue-cured acreages are also harvested in Prince Edward Islan Nova Scotia and New Brunswick. Although acreages planted were lower in 1969 than 1968, yields per acre in all producing areas were higher, resulting in an increase in producti from 218,807,000 lb. to 247,465,000 lb. The average value per pound decreased in 19 to 65.8 cents from 70.3 cents.

Data on the production of cigarettes for domestic consumption are no longer availab However, on the basis of domestic sales reported to DBS by manufacturers, the consumpti of cigarettes increased to 46,582,210,000 in 1969 from the 46,270,233,000 sold in 1968.

30.—Acreage, Production and Value of the Commercial Crop of Leaf Tobacco, by Province, 1962-69

Year	Quebec			Ontario			Other Provinces		
	Harvested Area	Production	Value	Harvested Area	Production	Value	Harvested Area	Production	Valu
	acres	'000 lb.	$'000	acres	'000 lb.	$'000	acres	'000 lb.	$'000
1962	8,901	12,388	4,582	121,640	190,265	91,165	515	374	1
1963	8,933	10,776	4,046	104,178	189,719	86,279	782	649	3
1964	8,334	9,919	4,299	76,267	142,738	78,390	715	757	4
1965	9,348	9,272	3,961	89,220	158,810	101,765	776	798	4
1966	8,714	12,288	6,927	120,561	220,736	156,318	923	1,158	7
1967	8,871	10,601	6,018	130,871	201,074	137,983	1,031	1,421	9
1968	9,323	12,461	7,389	123,968	204,256	144,983	1,580	2,090	1,4
1969	9,448	13,100	7,959	120,130	230,340	152,419	3,174	4,025	2,5

31.—Acreage, Production and Value of the Commercial Crop of Leaf Tobacco, by Main Type, 1967-69

Type of Tobacco and Year	Harvested Area	Average Yield per Acre	Total Production	Average Farm Price per lb.	Gross Farm Va
	acres	lb.	'000 lb.	cts.	$'000
Flue-cured 1967	135,363	1,509	204,267	69.1	141,11
1968	130,170	1,623	211,274	71.3	150,54
1969	127,762	1,879	248,705	66.4	159,46
Burley 1967	2,422	1,936	4,690	51.4	2,41
1968	1,578	1,948	3,074	54.7	1,68
1969	2,120	1,686	3,574	55.9	1,99
Cigar leaf 1967	2,141	1,465	3,140	32.5	1,02
1968	2,300	1,479	3,403	33.2	1,13
1969	1,968	1,395	2,745	35.0	97
Totals[1] **1967**	**140,773**	**1,514**	**213,096**	**68.0**	**144,97**
1968	**134,871**	**1,622**	**218,807**	**70.3**	**153,80**
1969	**132,752**	**1,864**	**247,465**	**65.8**	**162,92**

[1] Includes other types not specified.

Eggs.—Egg production in 1969 at 471,231,000 doz. was 4.0 p.c. higher than in 19 and 5.0 p.c. higher than the record 448,200,000 doz. produced in 1959. The number layers increased slightly in 1969 over 1968, the rate of lay per 100 layers rose to 20,6 from 20,380 and the farm selling price of eggs averaged 43.0 cents per doz. compared wi 37.8 cents. The three Maritime Provinces produced 7.0 p.c. of all eggs in 1969; Queb 16.4 p.c.; Ontario, 38.2 p.c.; the Prairie Provinces, 24.4 p.c.; and British Columbia, 12.3 p

32.—Production, Utilization and Value of Farm Eggs, by Province, 1968 and 1969

Province	1968				1969			
	Average Number of Layers	Average Production per 100 Layers	Net Eggs Laid[1]	Total Value (Sold and Used)	Average Number of Layers	Average Production per 100 Layers	Net Eggs Laid[1]	Total Value (Sold and Used)
	'000	No.	'000 doz.	$'000	'000	No.	'000 doz.	$'000
Newfoundland	..	..	..	..	444	21,893	8,088	4,093
Prince Edward Island	191	19,070	3,027	1,125	186	19,101	2,956	1,290
Nova Scotia	1,132	21,575	20,340	8,236	1,182	21,293	20,968	9,877
New Brunswick	535	20,349	9,073	4,361	543	19,843	8,999	4,620
Quebec	4,785	19,635	78,249	32,574	4,681	19,867	77,445	36,673
Ontario	10,108	20,934	176,331	67,716	10,337	20,882	179,800	78,223
Manitoba	2,953	20,699	50,967	16,092	3,103	20,742	53,577	19,529
Saskatchewan	1,319	17,962	19,759	6,603	1,323	18,919	20,756	7,735
Alberta	2,491	18,921	39,189	13,179	2,537	19,275	40,620	16,526
British Columbia	3,167	21,241	56,050	21,503	3,139	22,184	58,022	24,169
Totals	**26,681**	**20,380**	**452,985**	**171,389**	**27,475**	**20,602**	**471,231**	**202,735**

[1] Total laid less loss.

Wool.—Table 33 gives the estimated production and apparent consumption of wool in Canada for the years 1965 to 1969. It should be noted that the estimates for 1967, 1968 and 1969 are not strictly comparable with those of previous years because they exclude the output of pulled wool which is now produced by fewer firms and, according to the provisions of the Statistics Act, cannot be shown. Canada produces only between 7 p.c. and 8 p.c. of domestic wool requirements.

33.—Production and Apparent Consumption of Wool, 1965-69

Item		1965	1966	1967	1968	1969
Shorn Wool Produced—						
Yield per fleece	lb.	7.8	7.7	7.6	7.5	7.6
Total yield	'000 lb.	4,516	3,891	3,758	3,476	3,465
Price per pound[1]	cts.	48.9	48.6	49.4	47.8	45.8
Total value	$'000	2,273	2,032	1,952	1,663	1,374
Pulled Wool Produced	'000 lb.	1,162	867	[2]	[2]	[2]
Totals, Wool Production	'000 lb.	5,678	4,758	3,758	3,476	3,465
Apparent wool consumption[2]	'000 lb.	66,664	63,654	55,586	60,985	54,228

[1] Includes Agricultural Stabilization Act payments of 16.3 cents per lb. in 1965, 18.3 cents per lb. in 1966, 27.9 cents per lb. in 1967, 29.4 cents per lb. in 1968 and 29.0 cents per lb. on the 1969 clip for qualifying grades of wool. [2] See text above.

Honey.—As shown in Table 34, honey production in 1969 increased 60 p.c. over 1968. Average production per colony was 127 lb. compared with 81 lb. in 1968.

Honey is produced commercially in all provinces except Newfoundland and yield vary considerably from year to year. In 1969, Alberta was the largest producer, surpassing Manitoba, the next largest producer, by 11,030,000 lb. Honey bees are kept in some fruit growing districts for pollination purposes and are also used for pollination of certain seed crops.

To facilitate storage, shipment and uniformity of quality, large quantities of Canadian honey are pasteurized. Beekeepers' marketing co-operatives are active in several provinces. In 1969, Canada exported 4,795,426 lb. of honey valued at $1,036,000, mainly to Britain, France, the United States and West Germany.

34.—Honey and Beeswax Production 1967-69, with Average for 1962-66

Item		Average 1962-66	1967	1968	1969
Honey—					
Total production	'000 lb.	40,635	45,682	33,372	53,31
Average production per colony	lb.	105	103	81	12
Total value	$'000	7,241	7,739	6,057	8,81
Beeswax—					
Production	'000 lb.	604	679	496	79
Value	$'000	279	355	290	49
Total Value, Honey and Beeswax	**$'000**	**7,520**	**8,094**	**6,347**	**9,31**
Beekeepers	No.	10,428	9,660	9,600	9,31
Bee colonies	"	385,132	445,070	414,060	419,06

35.—Honey Production, by Province, 1967-69, with Average for 1962-66

Province	Average 1962-66	1967	1968	1969
	'000 lb.	'000 lb.	'000 lb.	'000 lb
Prince Edward Island	51	33	42	3
Nova Scotia	214	236	181	21
New Brunswick	94	108	138	12
Quebec	3,103	3,063	2,395	3,50
Ontario	10,747	6,032	8,947	8,99
Manitoba	6,515	9,140	4,316	9,25
Saskatchewan	5,373	7,150	5,085	8,60
Alberta	12,299	17,380	10,230	20,29
British Columbia	2,239	2,540	2,038	2,25
Totals	**40,635**	**45,682**	**33,372**	**53,31**

Sugar Beets and Beet Sugar.—Sugar beets are grown commercially in Quebec, Ontario, Manitoba and Alberta and beet sugar factories are located in these provinces. In Quebec, commercial production is centred in the St. Hilaire area of the Eastern Townships; in Ontario, production is confined to the southwestern section of the province. Alberta produces the largest crop and in that province sugar beets are grown under irrigation.

36.—Acreage, Yield and Value of Sugar Beets and Quantity and Value of Beet Sugar Shipments, 1964-69

Year	Sugar Beets					Beet Sugar (All Types)	
	Harvested Area	Yield per Acre	Total Yield	Average Price per Ton	Total Farm Value	Shipments	Value
	acres	tons	tons	$	$'000	'000 lb.	$'000
1.....	101,312	12.81	1,297,912	14.71	19,091	307,652	37,033
5.....	85,023	13.44	1,142,341	16.69	19,061	327,288	23,626
6.....	81,272	14.35	1,166,554	16.40	19,126	276,213	19,298
7.....	83,305	12.98	1,081,082	16.70	18,054	303,076	21,172
8.....	79,666	13.79	1,098,221	17.23	18,923	287,053	20,100
9.....	79,227	13.61	1,078,221	10.48	11,305	..	..

Maple Sugar and Maple Syrup.—Maple syrup is produced commercially in the ovinces of Nova Scotia, New Brunswick, Quebec and Ontario. The bulk of the crop nes from the Eastern Townships of Quebec, a district famous both in Canada and in the ited States as the centre of the maple products industry. Virtually all of the maple oducts exported go to the United States with the larger proportion moving as sugar, hough substantial quantities of syrup are also shipped. Much of the syrup sold in nada is marketed in one-gallon cans direct to the consumer from the producer but a siderable amount of both sugar and syrup is sold each year to processing firms.

—Production of Maple Sugar and Maple Syrup, by Province, 1967-69, with Average for 1962-66

Province and Year	Maple Sugar		Maple Syrup			Total Value, Sugar and Syrup
	Quantity	Value	Quantity	Average Price per gal.	Value	
	lb.	$	gal.	$	$	$
a Scotia—						
Av. 1962-66.....	8,096	5,600	3,304	6.05	20,000	25,600
1967.....	8,010	7,000	4,930	7.30	36,000	43,000
1968.....	4,440	4,000	5,220	7.47	39,000	43,000
1969.....	9,012	7,000	3,658	7.38	27,000	34,000
Brunswick—						
Av. 1962-66.....	29,266	21,000	8,200	5.93	48,600	69,600
1967.....	30,320	27,000	8,160	6.62	54,000	81,000
1968.....	22,620	23,000	8,460	6.86	58,000	81,000
1969.....	21,110	21,000	8,840	7.35	65,000	86,000
ec—						
Av. 1962-66.....	538,200	290,800	2,246,800	4.04	9,069,000	9,359,800
1967.....	381,000	240,000	2,183,000	4.20	9,169,000	9,409,000
1968.....	385,000	243,000	2,371,000	4.18	9,911,000	10,154,000
1969.....	326,000	212,000	1,678,000	4.25	7,132,000	7,344,000
rio—						
Av. 1962-66.....	12,001	9,200	236,700	5.44	1,287,200	1,296,400
1967.....	14,096	14,000	224,130	6.09	1,365,000	1,379,000
1968.....	11,390	12,000	227,750	6.30	1,435,000	1,447,000
1969.....	7,624	9,000	191,446	6.68	1,279,000	1,288,000
Totals—						
Av. 1962-66.....	**587,563**	**326,600**	**2,495,004**	**4.18**	**10,424,800**	**10,751,400**
1967.....	**433,426**	**288,000**	**2,420,220**	**4.39**	**10,624,000**	**10,912,000**
1968.....	**423,450**	**282,000**	**2,612,430**	**4.38**	**11,443,000**	**11,725,000**
1969.....	**363,746**	**249,000**	**1,881,944**	**4.52**	**8,503,000**	**8,752,000**

Greenhouse Operations.—Annual surveys are made of greenhouse operatio Resulting figures are based on data reported by firms and individuals returning questi naires, with the exception of that for cucumbers and tomatoes grown in Essex County Ontario (the most important producing area), which are based on information obtai from the local co-operative marketing agency. Only greenhouses used for the producti of items for sale are included in the survey.

38.—Greenhouse Operations, by Province, 1968, with Totals for 1965-68

Province	Firms Reporting	Area				Value of Sales (Wholesale)			
		Under Glass	Under Cloth	Under Plastic	Open Field	Cut Flowers and Potted Plants	Vegetables	Plants—Rooted Cuttings, etc., for Growing On	Total Sales
	No.	sq. ft.	sq. ft.	sq. ft.	acres	$	$	$	$
Nfld..... P.E.I.....	4	[1]	—	[1]	—	[1]	[1]	[1]	7,
N.S.....	34	809,422	[1]	454,951	17.8	1,377,133	330,555	30,183	1,737,
N.B.....	15	147,107	—	31,593	3.9	273,290	92,925	22,704	388,
Que.....	103	606,634	70,218	287,065	63.8	944,187	52,521	287,632	1,284,
Ont.....	603	18,169,678	227,015	4,435,486	337.3	13,422,592	8,480,260	4,314,927	26,217,
Man.....	34	143,355	6,480	121,577	17.9	309,357	1,100	149,358	459,
Sask.....	13	108,554	7,400	34,350	33.0	42,913	12,274	115,509	170,
Alta.....	61	1,469,757	1,260	203,544	41.2	1,656,953	225,510	300,073	2,182,
B.C.....	167	1,588,922	37,120	500,996	122.4	1,590,373	1,443,837	383,823	3,418,
Totals, 1968	**1,034**	**23,043,429**	**349,493**	**6,069,562**	**637.3**	**19,616,798**[2]	**10,638,982**[2]	**5,604,209**[2]	**35,867,**
1967	**887**	**23,955,938**	**270,866**	**5,367,723**	**677.8**	**24,232,496**	**9,035,283**	**5,035,315**	**38,303,**
1966	**888**	**21,125,648**	**546,934**	**4,630,300**	**769.0**	**18,280,845**	**8,989,378**	**6,478,808**	**33,749,**
1965	**909**	**19,987,125**	**328,122**	**4,458,882**	**875.6**	**17,966,998**	**8,544,835**	**3,865,344**	**30,377**

[1] Fewer than three firms reporting. [2] Excludes Newfoundland and Prince Edward Island.

Subsection 7.—Prices of Agricultural Products

The monthly index of farm prices of agricultural products was designed to meas changes occurring in the average prices farmers receive at the farm from the sale of fa products. In comparing current index numbers with those prior to August 1969, following points should be considered. Prices of all western grains used in the construct of the index prior to that date are final prices; all later figures are initial prices only wheat, oats and barley. Any subsequent participation payments will be added to prices currently used and the index revised upward accordingly.

—Average Index Numbers of Farm Prices of Agricultural Products, by Province, 1963-69, and Monthly Indexes for 1968 and 1969

(1961=100)

NOTE.—A description of this index, its coverage and the methods used will be found in DBS *Quarterly Bulletin Agricultural Statistics* (Catalogue No. 21-003) for July-September 1969.

Year and Month	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
erages										
1963	**106.9**	**101.2**	**101.8**	**100.3**	**102.6**	**102.6**	**103.0**	**105.4**	**102.6**	**102.9**
1964	**118.9**	**98.3**	**111.6**	**101.4**	**100.5**	**99.8**	**101.7**	**102.0**	**99.1**	**101.3**
1965	**153.7**	**107.4**	**139.1**	**111.9**	**110.1**	**103.9**	**101.6**	**106.0**	**108.4**	**107.8**
1966	**134.0**	**113.9**	**122.5**	**125.2**	**122.0**	**110.9**	**108.1**	**115.9**	**115.1**	**117.0**
1967	**115.0**	**110.9**	**111.4**	**125.2**	**123.0**	**109.5**	**106.9**	**113.9**	**111.6**	**116.0**
1968	**123.4**	**114.0**	**117.3**	**126.0**	**124.0**	**105.1**	**98.8**	**109.5**	**118.6**	**113.9**
1969	**122.7**	**122.8**	**117.5**	**131.3**	**130.3**	**102.7**	**92.8**	**110.6**	**125.6**	**115.5**
1968										
uary	121.8	110.5	115.2	123.7	121.1	105.4	101.3	108.1	113.5	112.8
ruary	111.6	109.4	111.4	123.1	121.3	105.1	101.6	107.6	114.0	112.6
rch	111.6	110.0	112.7	123.4	120.2	105.3	101.1	107.8	115.0	112.3
il	113.0	109.3	108.1	123.1	120.1	105.2	101.3	108.4	115.5	112.4
y	132.1	110.6	115.6	123.0	120.8	106.4	102.0	109.6	114.8	113.2
e	136.8	110.8	119.8	123.9	122.6	107.4	102.5	111.5	116.1	114.6
y	136.9	111.7	132.6	127.6	124.5	108.2	103.2	112.5	119.4	116.4
gust	144.9	119.9	127.6	126.5	125.6	105.4	98.2	111.6	119.1	115.1
tember	127.0	120.6	118.4	129.8	129.5	105.7	96.8	111.5	123.2	116.3
ober	114.3	117.6	115.3	125.7	126.5	104.0	94.5	109.3	122.8	113.6
vember	115.2	118.2	116.0	131.1	127.7	101.8	91.9	107.9	124.0	113.8
cember	115.8	119.6	114.9	130.7	128.1	101.8	91.2	108.6	125.8	113.9
1969										
uary	117.9	118.4	114.3	129.4	126.4	100.4	91.3	106.7	124.5	112.7
ruary	115.5	117.7	114.1	130.0	125.9	100.8	91.5	107.6	125.4	112.9
rch	115.6	117.8	110.9	129.1	125.5	100.6	91.4	108.3	125.5	112.7
il	114.9	117.9	111.0	127.9	126.5	102.9	93.3	109.8	126.0	113.7
y	123.4	120.0	115.8	130.8	129.0	104.6	96.5	117.4	127.8	117.4
e	121.0	123.0	115.9	131.7	135.6	108.0	97.1	118.2	128.6	120.1
y	122.9	122.5	119.6	131.0	135.5	106.8	97.3	116.8	127.5	119.6
gust	142.5	126.5	125.6	133.5	134.5	102.1	91.8	110.4	126.2	117.1
tember	120.5	128.2	116.4	132.4	131.7	102.4	92.2	110.2	124.4	115.9
ober	123.0	128.1	118.5	132.7	131.0	102.2	90.6	107.8	122.7	114.9
vember	126.4	126.1	123.8	132.6	131.4	100.6	90.0	106.2	124.2	114.5
cember	129.1	127.5	123.9	134.0	131.1	100.6	90.1	107.7	125.0	115.0

—Average Cash Prices per Bushel of Major Canadian Grains, Crop Years Ended July 31, 1960-69

(Basis, in store Thunder Bay)

Year Ended July 31—	Averages in Cents and Eighths per Bushel				
	Wheat,[1,2] No. 1 N.	Oats,[1] No. 2 C.W.	Barley,[1] No. 3 C.W. — 6 Row	Rye,[3] No. 2 C.W.	Flaxseed,[3] No. 1 C.W.
	cts.	cts.	cts.	cts.	cts.
	165/7	82/4	108/1	109/7	334/2
	167/4	81/2	107/5	105	311/4
	189/7	96/1	143/7	136/6	368/2
	196/1	81/6	130/6	137/2	335
	203/3	78/5	123/4	146/7	319/6
	198/3	83	133/2	125/4	320/3
	199/6	89/6	138/4	128/5	299/3
	211/6	92/5	137/1	133/1	300/2
	194/3	95/2	130/5	128/2	345/5
	194/7	85/4	119/6	124/3	330/6

Canadian Wheat Board daily fixed prices. [2] International Wheat Agreement and domestic sales.
nnipeg Grain Exchange daily closing cash quotations.

41.—Yearly Average Prices per 100 lb. of Canadian Livestock at Principal Markets, 1966-

Item	Toronto				Montreal			
	1966	1967	1968	1969	1966	1967	1968	1969
	$	$	$	$	$	$	$	$
Steers, good	25.85	27.65	26.90	29.35	25.45	27.65	27.20	29.6
Steers, medium	24.30	25.30	25.00	27.61	24.25	26.10	25.60	27.8
Steers, common	21.00	22.00	21.12	24.87	20.95	22.80	22.71	25.1
Heifers, good	24.45	25.60	24.91	27.32	22.90	23.75	23.40	25.6
Heifers, medium	22.40	23.60	23.12	25.76	21.10	21.75	21.65	23.7
Cows, good	19.80	20.65	19.85	22.75	19.90	21.00	20.00	22.8
Cows, medium	18.20	19.36	18.40	21.07	17.35	17.95	17.22	20.1
Bulls	20.05	21.95	21.20	23.87	20.65	21.70	21.98	24.5
Feeder steers, good	27.70	28.70	28.45	31.60	[1]	[1]	[1]	[1]
Feeder steers, common	23.20	23.75	23.60	26.66	26.50	[1]	[1]	[1]
Calves, veal, good and choice	34.95	36.15	35.80	38.05	35.40	37.00	39.50	42.9
Calves, veal, common and medium	24.10	25.83	25.30	28.68	26.10	28.35	29.37	32.7
Hogs, Grade B, dressed	34.90	29.70	29.80	35.70 [2]	33.50	28.40	28.70	33.9
Lambs, good	26.50	26.65	29.65	32.80	23.95	24.80	25.65	29.3
Lambs, common	23.25	22.65	26.57	28.52	21.90	22.20	20.94	22.7
Sheep, good	10.60	11.33	11.37	14.26	12.50	13.10	12.81	14.5
	Winnipeg				Edmonton			
	1966	1967	1968	1969	1966	1967	1968	196
	$	$	$	$	$	$	$	$
Steers, good	25.15	26.60	26.85	29.10	24.05	25.35	24.90	27.1
Steers, medium	23.15	24.80	25.50	27.83	22.65	24.20	23.60	26.4
Steers, common	19.40	22.60	22.80	26.01	20.50	22.35	21.96	25.4
Heifers, good	23.40	24.35	24.53	27.50	22.10	23.65	23.43	26.4
Heifers, medium	21.30	22.60	23.08	25.38	20.75	22.60	21.69	24.4
Cows, good	18.85	19.95	19.55	23.95	17.15	18.10	17.60	21.4
Cows, medium	17.70	18.35	18.29	22.12	15.95	16.85	16.48	19.4
Bulls	20.20	21.20	21.45	24.71	18.70	19.50	19.75	22.4
Feeder steers, good	25.55	26.55	26.85	32.00	24.70	26.40	26.75	31.4
Feeder steers, common	21.80	23.15	23.50	27.58	21.80	23.25	22.90	26.4
Feeder cows and heifers, good	21.35	22.45	22.95	26.87	19.80	22.40	22.80	27.4
Feeder cows and heifers, common	18.00	19.30	19.44	23.84	17.75	19.85	19.71	24.4
Calves, veal, good and choice	34.35	38.85	37.90	42.05	28.20	30.40	30.35	39.4
Calves, veal, common and medium	26.65	27.45	30.29	32.70	21.95	23.10	23.67	27.4
Hogs, Grade B, dressed	33.45	27.55	28.10	35.45 [2]	32.10	25.70	26.50	33.4
Lambs, good	21.85	21.45	26.30	30.75	22.00	19.95	22.05	26.4
Lambs, common	19.50	18.35	21.99	23.45	19.30	18.20	19.80	22.4
Sheep, good	5.00	5.45	6.75	7.91	5.90	7.50	7.67	8.4

[1] No sales reported. [2] Hogs, Index 100, base price.

Subsection 8.—Food Consumption

Food consumption figures represent available supplies, including production a imports, adjusted for change of stocks, exports, marketing losses and industrial uses. calculations are made at the retail stage of distribution, except for meats for which t figures are worked out at the wholesale stage. The amount of food actually eaten wou be somewhat lower than indicated because of losses and waste occurring after the produ reach the hands of the consumer.

All basic foods are classified under 12 main commodity groups. The total for ea group is computed using a common denominator for the group, for example: milk sol (dry weight) for the dairy products group; fat content for fats and oils; and fresh equival for fruits. All foods are included in their basic form, that is, as flour, fat, sugar, e rather than in more highly manufactured forms.

The series in Table 42 represents the official estimates of yearly supplies of food mov- into consumption, expressed in pounds per capita, for the years 1963-67 as an average comparison with the years 1968 and 1969.

42.—Per Capita Supplies of Food Moving into Consumption 1968 and 1969, with Average for 1963-67

Kinds of Food and Weight Base	Pounds per Capita per Annum			Percentages of 1963-67 Average	
	1963-67 Average	1968	1969[p]	1968	1969[p]
reals ..... **Retail wt.**	**153.2**	**149.2**	**147.5**	**97.4**	**96.3**
lour (including rye flour)[1] ..... "	133.9	130.1	135.5	97.2	101.2
atmeal and rolled oats ..... "	4.9	3.8	3.4	77.6	69.4
ot and pearl barley ..... "	0.1	0.1	0.1	100.0	100.0
orn meal and flour ..... "	3.0	4.1	4.1	136.7	136.7
uckwheat flour ..... "	0.04	0.02	0.03	50.0	75.0
ice ..... "	4.5	4.5	4.4	100.0	97.8
reakfast food ..... "	6.8	6.6	..	97.1	..
atoes ..... **Fresh equiv.**	[2]	[2]	[2]	[2]	[2]
hite potatoes, fresh ..... Retail wt.	140.4	170.2	168.2	121.2	119.8
weet potatoes, fresh ..... "	0.4	0.4	0.4	100.0	100.0
gars and Syrups ..... **Sugar content**	**107.6**	**109.3**	**110.5**	**101.6**	**102.7**
ugar ..... Refined wt.	99.7	101.8	103.4	102.1	103.7
aple sugar ..... Retail wt.	0.6	0.6	0.2	100.0	33.3
oney ..... "	2.0	1.6	1.9	80.0	95.0
ther ..... "	8.6	9.2	8.7	107.0	101.2
lses and Nuts ..... **Retail wt.**	**11.0**	**11.1**	**8.9**	**101.0**	**80.9**
ry beans ..... "	2.6	2.2	1.0	84.6	38.5
ry peas ..... "	1.4	0.2	0.1	14.3	7.1
eanuts ..... "	3.4	3.6	3.4	105.9	100.0
ree nuts ..... "	1.2	1.2	1.4	100.0	116.7
ocoa ..... Green beans	3.1	3.9	3.0	125.8	96.8
uits ..... **Fresh equiv.**	**242.1**	**248.6**	**246.3**	**102.7**	**101.7**
omatoes and Citrus Fruit—					
Tomatoes, fresh ..... Retail wt.	12.6	11.3	9.2	89.7	73.0
Tomato products[3] ..... Net wt. canned	20.5	21.0	20.6	102.4	100.5
Citrus fruit, fresh ..... Retail wt.	24.4	23.3	27.6	95.5	113.1
Citrus fruit juice ..... Net wt. canned	12.1	14.0	14.3	115.7	118.2
ther Fruit—					
Fresh ..... Retail wt.	77.6	73.6	76.5	94.8	98.6
Canned ..... Net wt. canned	16.8	16.2	16.0	96.4	95.2
Juice ..... "	10.5	11.0	11.1	104.8	105.7
Frozen ..... Retail wt.	3.3	2.9	2.7	87.9	81.8
Unspecified ..... Fresh equiv.	23.3	23.3	19.2	100.0	82.4
etables ..... **Fresh equiv.**	**111.5**	**117.6**	**108.2**	**105.5**	**97.0**
resh—					
Cabbage and greens ..... Retail wt.	18.5	20.2	19.3	109.2	104.3
Carrots ..... "	15.4	13.9	17.0	90.3	110.4
Legumes ..... "	1.6	0.9	1.0	56.2	62.5
Other ..... "	35.9	40.6	31.8	113.1	88.6
rocessed—					
Canned ..... Net wt. canned	17.8	20.7	19.3	116.3	108.4
Frozen ..... Retail wt.	4.6	4.8	5.1	104.3	110.9
Other ..... Fresh equiv.	11.7	9.9	7.6	84.6	65.0
s and Fats ..... **Fat content**	**46.1**	**48.9**	**41.6**	**106.1**	**90.2**
argarine ..... Retail wt.	9.0	9.4	9.7	104.4	107.8
ard ..... "	7.5	7.8	..	104.0	..
hortening and shortening oils ..... "	11.3	14.1	15.2	124.8	134.5
ther oils and fats ..... "	5.2	6.0	5.8	115.4	111.5
utter ..... "	18.3	16.5	15.7	90.2	85.8
gs ..... **Fresh equiv.**	**31.8**	**32.0**	**32.6**	**100.6**	**102.5**
at ..... **Carcass wt.**	**149.6**	**159.4**	**156.0**	**106.6**	**104.3**
ork ..... "	50.7	53.6	51.9	105.7	102.4
eef ..... "	80.1	86.7	86.4	108.2	107.9
eal ..... "	7.2	6.4	5.1	88.9	70.8

For footnotes, see end of table, p. 602.

42.—Per Capita Supplies of Food Moving into Consumption, 1968 and 1969, with Average for 1963-67—concluded

Kinds of Food and Weight Base		Pounds per Capita per Annum			Percentages of 1963-67 Average	
		1963-67 Average	1968	1969p	1968	1969p
Meat—concluded						
Mutton and lamb	Carcass wt.	3.4	4.2	4.0	123.5	117.6
Offal	"	3.8	3.8	4.0	100.0	105.3
Canned meat	Net wt. canned	5.6	6.6	7.5	117.9	133.9
Poultry and Fish	**Edible wt.**	**40.7**	**42.1**	**44.9**	**103.4**	**110.3**
Hens and chickens	Eviscerated wt.	26.8	29.4	32.4	109.7	120.9
Other poultry	"	9.9	10.3	10.4	104.2	105.0
Fish and shellfish, fresh and frozen	Edible wt.	9.0	8.3	9.4	92.2	104.4
Fish, cured (smoked, salted, pickled)	"	1.2	1.0	0.8	83.3	66.7
Fish and shellfish, canned	Net wt. canned	3.3	3.4	3.0	103.0	90.9
Milk and Cheese	**Milk solids**	**60.6**	**60.0**	**61.6**	**99.0**	**101.6**
Cheddar cheese[4]	Retail wt.	7.1	7.6	8.2	107.0	115.5
Other cheese	"	1.9	2.7	3.0	142.1	157.9
Cottage cheese	"	1.6	1.7	1.8	106.2	112.5
Evaporated whole milk	"	16.1	14.3	13.3	88.8	82.6
Condensed whole milk	"	1.0	1.2	1.0	120.0	100.0
Whole milk powder and cream powder[5]	"	0.2	0.2	0.1	100.0	50.0
Skim milk powder	"	7.6	7.8	10.0	102.6	131.6
Milk in ice cream	"	29.4	35.8	37.7	121.8	128.2
Powdered buttermilk	"	0.5	0.6	0.6	120.0	120.0
Fluid whole milk[6]	"	315.8	294.7	287.1	93.3	90.9
Miscellaneous milk products[7]	"	3.9	3.8	2.7	97.4	69.2
Beverages						
Tea	Primary distribution wt.	2.4	2.5	2.4	104.2	100.0
Coffee	Green beans	8.9	9.7	9.3	109.0	104.5

[1] Fluctuations in apparent per capita flour consumption are caused partly by lack of complete data on flour inve tories in all positions. [2] Information on processed potatoes is not available. [3] Tomatoes canned, toma juice, tomato pulp, paste and purée, and ketchup. [4] Includes process cheese. [5] Cream powder, includ with whole milk powder, too small to be expressed. [6] Includes cream expressed as milk. [7] Includ evaporated and condensed skim milk, condensed buttermilk, sugar of milk, formula skim milk products, conce trated liquid skim milk and lactalbumin.

Disappearance of Meats and Lard.—Production of meats from slaughter in Canad total supply, distribution and per capita disappearance of meats and lard are shown i Table 43. All estimates are on a cold carcass-weight basis except canned meats, whic are in terms of product.

43.—Supply, Distribution and Disappearance of Meats and Lard, 1965-69

Item		1965	1966	1967	1968	1969
Beef—						
Animals slaughtered in Canada	'000	3,367.8	3,291.7	3,229.7	3,446.1	3,254.
Estimated dressed weight	'000 lb.	1,749,949	1,756,728	1,738,631	1,855,346	1,801,34
On hand, Jan. 1	"	45,045	46,770	44,121	41,874	40,06
Imports for consumption	"	18,514	25,425	39,916	35,826	110,94
Total Supply	"	1,813,508	1,828,923	1,822,668	1,933,046	1,952,35
Exports	"	102,293	78,752	40,709	68,064	67,65
Used for canning	"	19,789	21,189	23,444	23,192	22,33
On hand, Dec. 31	"	46,770	44,121	41,874	40,064	39,94
Domestic Disappearance	'000 lb.	1,644.656	1,684,861	1,716,641	1,801,726	1,822,42
Per Capita Disappearance	lb.	83.6	84.1	84.0	86.7	86.
Veal—						
Animals slaughtered in Canada	'000	1,302.2	1,128.6	1,176.1	1,107.8	903.
Estimated dressed weight	'000 lb.	165,505	141,321	148,721	134,738	107,61

43.—Supply, Distribution and Disappearance of Meats and Lard, 1965-69—concluded

Item		1965	1966	1967	1968	1969
l—concluded						
On hand, Jan. 1	'000 lb.	5,918	4,363	3,360	4,153	4,236
mports for consumption	"	[1]	[1]	[1]	[1]	[1]
Total Supply	"	168,423	145,684	152,081	138,891	111,855
Exports	"	[1]	[1]	[1]	[1]	[1]
Used for canning	"	1,248	1,598	1,714	1,401	1,098
On hand, Dec. 31	"	4,363	3,360	4,153	4,236	4,172
Domestic Disappearance	'000 lb.	162,812	140,726	146,214	133,254	106,585
Per Capita Disappearance	lb.	8.3	7.0	7.2	6.4	5.1
tton and Lamb—						
Animals slaughtered in Canada	'000	577.9	492.5	481.8	454.4	413.0
Estimated dressed weight	'000 lb.	25,091	21,730	20,935	19,685	18,081
On hand, Jan. 1	"	9,147	6,631	13,878	8,831	11,411
mports for consumption	"	30,299	55,643	48,686	71,455	69,620
Total Supply	"	64,537	84,004	83,499	99,971	99,112
Exports	"	370	622	184	94	690
Used for canning	"	1,454	1,372	1,486	1,049	1,038
On hand, Dec. 31	"	6,631	13,878	8,831	11,411	13,077
Domestic Disappearance	'000 lb.	56,082	68,132	72,998	87,417	84,307
Per Capita Disappearance	lb.	2.8	3.4	3.6	4.2	4.0
rk—						
Animals slaughtered in Canada	'000	7,931.9	7,890.3	9,162.4	9,233.7	8,730.1
Estimated dressed weight[2]	'000 lb.	1,006,533	1,014,295	1,181,470	1,181,301	1,134,496
On hand, Jan. 1	"	27,286	22,740	28,920	31,376	24,249
mports for consumption	"	37,222	28,262	28,755	38,504	70,224
Total Supply	"	1,071,041	1,065,297	1,239,145	1,251,181	1,228,969
Exports	"	58,029	48,479	59,374	60,820	56,655
Used for canning	"	48,537	46,928	49,330	52,500	54,229
On hand, Dec. 31	"	22,740	28,920	31,376	24,249	24,467
Domestic Disappearance	'000 lb.	941,735	940,970	1,099,065	1,113,612	1,093,618
Per Capita Disappearance	lb.	47.9	46.9	53.8	53.6	51.9
nned Meats—						
Estimated production	'000 lb.	94,032	96,032	104,023	114,500	132,405
On hand, Jan. 1	"	15,880	12,097	12,406	10,944	..
mports for consumption	"	15,142	19,644	26,159	23,374	29,076
Total Supply	"	125,054	127,773	142,588	148,818	161,481
Exports	"	6,107	4,886	4,202	3,605	2,375
On hand, Dec. 31	"	12,097	12,406	10,944	8,254	..
Domestic Disappearance	'000 lb.	106,850	110,481	127,442	136,959	159,106
Per Capita Disappearance	lb.	5.4	5.5	6.2	6.6	7.5
fal—						
Estimated production	'000 lb.	115,800	113,174	118,423	122,805	115,560
On hand, Jan. 1	"	6,835	7,493	6,924	7,618	7,306
mports for consumption	"	2,048	1,997	4,562	4,082	7,726
Total Supply	"	124,683	122,664	129,909	134,505	130,592
Exports	"	45,201	39,918	39,455	45,310	38,799
Used for canning	"	1,815	2,677	2,308	2,321	2,230
On hand, Dec. 31	"	7,493	6,924	7,618	7,306	7,598
Domestic Disappearance	'000 lb.	70,174	73,145	80,528	79,568	81,965
Per Capita Disappearance	lb.	3.6	3.6	3.9	3.8	4.0
rd—[3]						
Estimated production	'000 lb.	119,125	112,659	136,751	130,455	[4]
On hand, Jan. 1	"	6,976	5,086	6,024	7,438	..
mports for consumption	"	20,734	24,727	24,111	28,375	30,154
Total Supply	"	146,835	142,472	166,886	166,268	[4]
Exports	"	31	44	39	29	36
On hand, Dec. 31	"	5,086	6,024	7,438	5,082	..
Domestic Disappearance	'000 lb.	141,718	136,404	159,409	161,157	[4]
Per Capita Disappearance	lb.	7.2	6.8	7.8	7.8	[4]

[1] Quantity small; included with beef. [2] Trimmed of larding fat and excluding offal. [3] Includes mercial lard production and estimated lard equivalent of renderable pork fat available from all uninspected ughter. [4] Due to changes in lard source data, comparable 1969 information is not available.

Section 5.—Agricultural Statistics of the Census

Changes occurring in the agricultural industry are revealed by the results of th Census of Agriculture taken every five years. Details of the latest census are publishe in Volumes III, IV and V of the 1966 Census of Agriculture. For certain analyses of th census results, reference may be made to the 1968 and 1969 Canada Year Books; summar information relating to use of agricultural land, farm capital, farm tenure, farm mecha ization and labour, and types of farms is given at pp. 516-523 of the 1969 edition an additional information on types of commercial farms, economic classification of farm tenure and age of farm operators and farm electrification is given in the 1968 edition a pp. 528-533. Only data on number and area of farms and on size of census-farms a carried in this Section.

The term *census-farm*, which is used in the following paragraphs, refers to an agr cultural holding of one acre or more in size with sales of agricultural products during the months preceding the census date of $50 or more. Census-farms having sales of $2,5 or more during the preceding year are described as *commercial* farms.

Number and Area of Farms.—There were fewer census-farms in Canada in 19 than in 1961, the number dropping 10.5 p.c. from 480,903 to 430,522. A decrease w shown in each province, the highest proportionate drop being 26.1 p.c. in New Brunswi and the lowest 2.5 p.c. in Newfoundland. On a regional basis, the trend was most pr nounced in the Atlantic region where the decrease was 21.0 p.c. and least pronounced in th Prairie region where it was 7.4 p.c.

Although farm numbers were lower, the total area of census-farms was almost 1 p. higher, increases in the Prairie region and British Columbia more than offsetting decreas in the Atlantic and Central regions. Thus, while the number of census-farms in the Prair region decreased 7.4 p.c., the farm area increased 2.8 p.c. Similarly, in British Columb the number of farms decreased 4.3 p.c. but farm area increased 17.4 p.c.

44.—Number and Area of Census-Farms and Commercial Farms, by Province, Censuses 1961 and 1966

Province or Territory	Census-Farms				Commercial Farms			
	1961		1966		1961		1966	
	No.	acres	No.	acres	No.	acres	No.	acres
Newfoundland	1,752	54,561	1,709	49,513	281	17,940	301	21,2
Prince Edward Island	7,335	960,157	6,357	926,978	2,886	480,969	3,328	607,8
Nova Scotia	12,518	2,230,395	9,621	1,851,895	3,016	799,267	2,867	818,5
New Brunswick	11,786	2,199,675	8,706	1,811,695	3,073	860,853	2,938	898,0
Quebec	95,777	14,198,492	80,294	12,886,069	38,927	6,778,393	41,961	7,713,3
Ontario	121,333	18,578,507	109,887	17,826,045	69,667	12,317,676	70,724	13,229,5
Manitoba	43,306	18,169,951	39,747	19,083,817	24,286	13,008,496	27,372	15,807,6
Saskatchewan	93,924	64,415,518	85,686	65,409,363	63,546	51,413,768	69,962	57,698,4
Alberta	73,212	47,228,653	69,411	48,982,875	45,203	37,241,021	48,971	40,986,6
British Columbia	19,934	4,506,552	19,085	5,292,310	8,150	3,174,572	8,407	4,061,3
Yukon and Northwest Territories	26	8,590	19	4,268	2	1,142	4	1,2
Canada	**480,903**	**172,551,051**	**430,522**	**174,124,828**	**259,037**	**126,094,097**	**276,835**	**141,844,0**

Of the 430,522 census-farms in 1966, 276,835 were classed as commercial, representi an increase over 1961 of nearly 7 p.c. There were more commercial farms in every provin except Nova Scotia and New Brunswick but 75 p.c. of the increased number were located the Prairie region. Commercial farms comprised 64.3 p.c. of all census-farms in 1966 b accounted for 81.5 p.c. of the agricultural land; in 1961 the proportions were 53.9 p.c. an

1 p.c., respectively. The total area of all commercial farms was 12.5 p.c. higher in 1966 n in 1961, an increase to which every province contributed. The largest percentage rease in area occurred in British Columbia and the largest increase in acreage occurred Saskatchewan.

Size of Census-Farms.—During the 1961-66 period the average size of census-farms tinued the previously observed rising trend, increasing by 45 acres from 359 to 404 acres; average size over the 1951-66 period increased by 125 acres. On a provincial basis, the 1-66 change varied from a decrease of two acres in Newfoundland to an increase of acres in Saskatchewan. On a regional basis, the Prairies had the largest increase, from to 685 acres, contrasted with the Central region where the increase was only from 151 61 acres.

The number of census-farms of 760 acres or more increased between 1961 and 1966 but se of under 760 acres declined. The pattern is generally similar in all provinces—the nber of smaller holdings tends to decrease while the number of larger ones increases, ough there is considerable variation among various size groups between provinces. nitoba, Saskatchewan and Alberta, where the trend toward larger farms is more pro- nced than in other provinces, also show slight increases in number of census-farms falling the two smaller size groups—under nine acres and 10-to-69 acres.

For Prince Edward Island, Nova Scotia, New Brunswick, Quebec and Ontario the dominant size group is still the 70-to-239-acre group, even though there has been a drop he number of census-farms in this category. The 240-to-399-acre group is the predomi- t one in the Prairie Provinces, but in Saskatchewan almost as many census-farms fall the 400-to-559, 560-to-759 and 760-to-1,119-acre groupings as in the 240-to-399-acre gory. In British Columbia the largest number of census-farms is in the 10-to-69-acre up. More than half of the census-farms in Newfoundland are under nine acres in size.

45.—Census-Farms classified by Size and by Province, Census 1966

Size of Farm	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.
	No.	No.	No.	No.	No.	No.
er 3 acres	363	40	173	73	416	1,794
3— 9 acres	590	96	337	131	1,009	4,078
10— 69 "	590	1,037	1,639	1,089	10,203	17,930
70— 239 "	144	4,337	4,915	4,879	54,789	64,959
240— 399 "	12	658	1,546	1,576	10,735	14,683
400— 559 "	5	137	594	589	2,355	4,080
560— 759 "	1	31	231	193	532	1,450
760—1,119 "	2	15	134	121	187	662
1,120—1,599 "	—	2	34	31	46	170
1,600 acres and over	2	4	18	24	22	81
Totals, Census-Farms	**1,709**	**6,357**	**9,621**	**8,706**	**89,294**	**109,887**

Size of Farm	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.
er 3 acres	228	197	323	1,083	2	4,692
3— 9 acres	594	315	792	3,575	1	11,518
10— 69 "	1,911	868	2,298	7,212	4	44,781
70— 239 "	8,139	8,858	12,648	3,217	8	166,893
240— 399 "	10,147	16,226	16,473	1,169	1	73,226
400— 559 "	7,085	14,553	10,966	731	—	41,095
560— 759 "	5,271	14,488	8,662	599	1	31,459
760—1,119 "	3,980	15,906	8,219	597	1	29,824
1,120—1,599 "	1,553	8,446	4,464	406	1	15,153
1,600 acres and over	839	5,829	4,566	496	—	11,881
Totals, Census-Farms	**39,747**	**85,686**	**69,411**	**19,085**	**19**	**430,522**

Section 6.—International Crop Statistics

Tables 46 and 47 are based on estimates published by the Foreign Agricultural Servi United States Department of Agriculture, and give the acreages and production of wh and the production of oats and barley for the harvests of 1968 and 1969 with average the years 1960-64, in the leading countries of the world.

46.—Estimated Acreages and Production of Wheat Harvested in 1968 and 1969 in Specified Countries, with Average for 1960-64

NOTE.—Years shown refer to years of harvest in the Northern Hemisphere. Harvests of Northern Hemispl countries are combined with those of the Southern Hemisphere which immediately follow.

Continent and Country	Acreages of Wheat[1]			Production of Wheat		
	Average 1960–64	1968	1969	Average 1960–64	1968	1969
	'000 acres	'000 acres	'000 acres	'000,000 bu.	'000,000 bu.	'000,000
North America	**77,323**	**86,550**	**74,389**	**1,816.6**	**2,293.2**	**2,218**
Canada	26,797	29,422	24,968	538.3	649.8	684
United States	48,481	55,262	47,555	1,221.9	1,576.3	1,458
Mexico	1,962	1,772	1,767	55.5	65.9	73
Guatemala	83	94	99	0.9	1.2	1
South America[2]	**16,960**	**20,466**	**18,837**	**346.3**	**312.1**	**366**
Argentina	11,651	14,423	12,628	263.2	210.9	249
Brazil	1,015	1,903	2,471	8.7	25.5	40
Chile	2,090	1,836	1,908	44.6	44.6	47
Colombia	350	259	180	4.6	4.6	2
Ecuador	166	173	185	2.3	2.5	2
Peru	377	321	371	5.5	4.4	5
Uruguay	1,107	1,322	830	15.6	17.3	14
Europe[2]	**70,076**	**70,820**	**69,343**	**2,073.1**	**2,685.5**	**2,610**
EEC—						
Belgium	513	502	492	29.3	30.8	28
France	10,459	10,104	9,998	437.5	550.6	534
Germany, West	3,430	3,618	3,692	173.8	227.7	220
Italy	10,996	10,576	10,423	303.5	354.8	350
Luxembourg	48	37	35	1.7	1.5	1
Netherlands	326	378	383	21.8	24.9	24
Total EEC	25,772	25,215	25,023	967.5	1,190.3	1,159
Austria	683	755	708	26.2	38.4	34
Denmark	299	237	242	17.9	17.0	15
Finland	598	596	561	15.5	26.3	18
Greece	2,690	2,538	2,496	63.1	55.7	64
Ireland	294	222	200	12.9	13.5	11
Norway	21	12	7	0.8	0.6	0
Portugal	1,754	1,517	1,317	19.3	27.4	14
Spain	10,251	9,760	9,251	151.4	201.2	172
Sweden	683	605	652	31.5	38.9	33
Switzerland	257	245	240	12.6	15.0	13
United Kingdom	2,064	2,417	2,058	121.0	127.5	123
Total Western Europe[2]	45,366	44,119	42,755	1,439.6	1,751.8	1,662
Albania	283	341	—	3.6	4.5	—
Bulgaria	3,057	2,614	2,538	77.2	92.9	92
Czechoslovakia	1,739	2,469	2,607	61.8	115.9	120
Germany, East	1,027	1,408	1,458	47.3	87.3	79
Hungary	2,594	3,281	3,264	67.9	123.2	131
Poland	3,619	4,660	4,967	102.2	171.6	180
Romania	7,256	6,961	6,425	140.5	178.1	159
Yugoslavia	5,135	4,967	4,989	132.9	160.2	179
Total Eastern Europe[2]	24,710	26,701	26,588	633.5	933.7	948
U.S.S.R. (Europe and Asia)	**160,000**	**166,128**	**163,827**	**1,837.2**	**2,814.6**	**2,395**

For footnotes, see end of table.

46.—Estimated Acreages and Production of Wheat Harvested in 1968 and 1969 in Specified Countries, with Average for 1960-64—concluded

Continent and Country	Acreages of Wheat[1]			Production of Wheat		
	Average 1960-64	1968	1969	Average 1960-64	1968	1969
	'000 acres	'000 acres	'000 acres	'000,000 bu.	'000,000 bu.	'000,000 bu.
Africa[2]	**17,542**	**19,998**	**19,671**	**208.7**	**291.5**	**260.7**
Algeria	4,733	5,630	—	47.4	56.3	—
Ethiopia	946	—	—	9.9	—	—
Morocco	3,905	4,885	4,359	38.1	88.6	59.3
Sudan	47	—	—	1.1	—	5.9
Tunisia	2,611	1,606	1,581	15.9	14.1	12.9
United Arab Republic	1,440	1,455	—	55.3	55.8	—
Kenya	267	413	—	4.3	8.3	—
South Africa, Republic of	2,851	3,954	4,201	31.7	46.7	48.5
Asia[2]	**147,707**	**160,264**	**159,791**	**1,919.7**	**2,360.3**	**2,456.9**
Cyprus	178	150	—	1.9	2.2	3.1
Iran	4,925	11,861	11,367	100.7	161.7	143.3
Iraq	3,060	4,965	5,162	26.7	50.0	43.7
Israel	128	252	210	2.5	6.4	5.3
Jordan	604	600	692	4.9	6.4	9.6
Lebanon	142	151	151	1.4	1.7	1.8
Turkey	19,243	20,015	20,509	255.0	308.6	305.0
Syria	2,750	2,200	—	26.7	22.0	22.0
China, Mainland	62,500	61,776	58,068	793.7	771.6	819.4
China, Taiwan	44	35	35	1.2	0.6	0.6
Afghanistan	5,700	—	—	80.8	113.2	—
India	33,123	37,060	39,432	397.2	607.7	685.3
Japan	1,475	796	709	50.7	37.2	27.9
Korea, South	328	389	—	9.9	12.7	13.7
Nepal	330	371	388	5.0	7.9	8.3
Pakistan	12,301	14,977	15,511	149.4	238.0	246.6
Oceania	**16,002**	**27,110**	**24,474**	**314.0**	**560.4**	**416.0**
Australia	15,805	26,797	24,200	304.9	544.0	404.0
New Zealand	197	313	274	9.1	16.4	12.0
World Totals[2]	**505,610**	**551,336**	**530,332**	**8,515.6**	**11,317.6**	**10,724.6**

[1] Harvested acreage as far as possible. [2] Estimated totals include allowances for producing countries t shown.

47.—Estimated Production of Oats and Barley Harvested in 1968 and 1969 in Specified Countries, with Average for 1960-64

NOTE.—Years shown refer to years of harvest in the Northern Hemisphere. Harvests of Northern Hemisphere untries are combined with those of the Southern Hemisphere which immediately follow.

Continent and Country	Oats			Barley		
	Average 1960-64	1968	1969	Average 1960-64	1968	1969
	'000,000 bu.	'000,000 bu.	'000,000 bu.	'000,000 bu.	'000,000 bu.	'000,000 bu.
North America	**1,338.2**	**1,326.5**	**1,345.9**	**585.7**	**757.4**	**804.8**
Canada	393.6	362.5	371.4	172.3	325.4	378.4
United States	939.9	939.2	949.9	405.6	423.0	417.2
Mexico	4.7	2.1	1.4	7.8	9.1	9.3
South America	**60.8**	**45.3**	**36.7**	**59.2**	**47.5**	**46.3**
Argentina	48.5	33.8	26.2	34.6	25.5	24.0
Chile	8.1	6.5	6.3	5.6	3.7	4.1
Colombia	—	—	—	5.0	3.2	3.7
Ecuador	—	—	—	3.9	5.1	4.6
Peru	—	—	—	8.5	7.8	8.0
Uruguay	4.2	5.0	4.1	1.6	2.2	1.9

47.—Estimated Production of Oats and Barley Harvested in 1968 and 1969 in Specified Countries, with Average for 1960-64—concluded

Continent and Country	Oats			Barley		
	Average 1960–64	1968	1969	Average 1960–64	1968	1969
	'000,000 bu.	'000,000 bu.	'000,000 bu.	'000,000 bu.	'000,000 bu.	'000,000 bu
Europe	**1,142.9**	**1,232.0**	**1,196.7**	**1,463.5**	**2,122.5**	**2,201.1**
EEC—						
Belgium	27.1	21.7	19.5	21.0	26.4	25.6
France	170.4	174.2	161.8	286.6	419.8	429.1
Germany, West	143.4	199.3	205.0	157.7	228.5	235.6
Italy	34.0	26.9	33.8	12.2	11.8	13.4
Luxembourg	2.4	2.3	3.0	0.9	2.2	2.4
Netherlands	27.6	21.9	22.2	17.2	17.9	17.9
Total EEC	404.9	446.3	445.4	495.6	706.6	724.0
Austria	21.8	22.3	19.8	26.5	35.4	42.9
Denmark	44.9	59.5	52.7	148.9	231.8	241.4
Finland	54.9	73.3	79.0	17.8	35.5	38.7
Greece	9.7	7.2	8.2	11.4	22.4	24.3
Ireland	23.7	18.8	15.8	23.1	31.6	34.4
Norway	9.0	12.1	7.9	19.4	28.5	20.8
Portugal	5.1	8.9	5.9	2.6	4.3	2.6
Spain	29.8	36.0	36.7	86.9	170.3	177.1
Sweden	82.5	104.9	75.5	48.2	81.6	70.3
Switzerland	2.8	2.1	2.3	4.5	5.1	6.2
United Kingdom	110.6	84.4	93.0	270.6	379.8	403.6
Total Western Europe	799.6	875.8	842.2	1,155.3	1,732.9	1,786.3
Bulgaria	10.6	4.8	5.4	29.5	37.2	42.2
Czechoslovakia	56.4	59.9	66.6	74.6	97.0	114.3
Germany, East	58.4	59.5	51.1	55.8	97.4	87.7
Hungary	8.0	4.7	5.4	44.1	41.5	41.6
Poland	175.1	199.2	193.6	61.6	68.6	79.7
Romania	12.1	7.9	11.1	18.3	27.1	28.2
Yugoslavia	22.7	20.3	21.2	24.2	20.7	21.1
Total Eastern Europe	343.3	356.3	354.5	308.1	389.6	414.8
U.S.S.R. (Europe and Asia)	**425.4**	**668.3**	**686.2**	**740.2**	**1,111.5**	**1,116.8**
Africa[1]	**10.7**	**13.1**	**11.0**	**126.9**	**176.6**	**121.0**
Algeria	—	—	—	26.1	24.7	—
Morocco	1.1	1.7	1.1	50.7	102.1	60.1
Tunisia	—	—	—	6.3	4.6	3.3
United Arab Republic	—	—	—	6.5	—	—
South Africa, Republic of	7.5	10.0	8.9	1.7	1.6	0.8
Asia[1]	**97.4**	**93.6**	**93.9**	**857.0**	**896.8**	**843.1**
Cyprus	—	—	—	3.1	2.3	4.8
Iran	—	—	—	43.6	58.3	55.1
Iraq	—	—	—	39.1	34.4	—
Israel	—	—	—	3.0	1.1	1.1
Syria	—	—	—	24.9	13.8	—
Turkey	30.0	31.0	33.1	152.0	160.8	165.3
Afghanistan	—	—	—	17.4	—	—
India	—	—	—	120.8	160.9	111.3
Japan	9.8	6.4	4.6	73.2	46.9	37.3
Korea, South	—	—	—	61.2	95.7	94.9
Pakistan	—	—	—	6.2	5.6	5.8
Oceania	**82.3**	**121.3**	**118.0**	**54.9**	**85.7**	**94.7**
Australia	79.6	117.8	115.0	50.4	75.6	86.4
New Zealand	2.7	3.5	3.0	4.5	10.1	7.4
World Totals[1]	**3,157.8**	**3,499.8**	**3,486.1**	**3,885.6**	**5,199.2**	**5,226.**

[1] Estimated totals include allowances for producing countries not shown.

CHAPTER XII.—FORESTRY*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

Canada's extensive forests have been an invaluable asset to the country and its people nce the earliest days of settlement. The productive portion of these forests has poured creasing wealth into the stream of national income, contributing to the economy of the untry as the producer of raw materials for industry and as the source of livelihood for undreds of thousands of persons. Perhaps in no other country is the national wealth so pendent upon its forest resources and the success of its forest industries as in Canada.

The present annual forest harvest of some 3,900,000,000 cu. feet of roundwood supports a highly complex and diversified domestic and export industry. The forest industries which include the logging industry, the wood industries and the paper and allied industries) rovide about 300,000 man-years of employment and pay out more than $1,700,000,000 nnually in salaries and wages. In addition, a considerable number of people derive part f their income from farm woodlot operations, etc. The forests support a large number of awmills and wood-using plants which in many cases are located in small towns and villages nd contribute appreciably to the local economies. The sale of forest products abroad epresents about one fifth of the value of Canada's export trade.

The predominant part played by the pulp and paper, lumber, and other forest products ndustries in the development of the country has, in the past, resulted in a widespread endency to evaluate the forest in terms of timber alone. There is now a growing realization of the value of the forest in assuring an adequate supply of good-quality water, in roviding for sport and recreation, in guarding against erosion, and in maintaining a abitat for wildlife. The increasing recognition of these forest values is fostering a broader nd more realistic concept of forestry.

The Canadian forest industry as a whole recorded a substantial increase in productivity ver the years 1961-68 inclusive, the total estimated "value added" (value of shipments ss cost of materials and fuel) advancing from $2,000,000,000 to $3,200,000,000; in 1967, he value added by the forest industry, which was $3,166,000,000, comprised 11 p.c. of the otal for all goods-producing industries.

* Sections of this Chapter that deal with forest resources and depletion and the federal forestry program were vised by the Canadian Forestry Service of the Department of Fisheries and Forestry, Ottawa. Provincial forestry ograms were prepared by the forestry officials of the respective provincial governments. Sections dealing with rest and allied industries, except as otherwise noted, were revised in the Forestry Section, Manufacturing and Primary Industries Division, Dominion Bureau of Statistics.

During this period, roundwood production moved up 25 p.c. from 3,175,000,000 t 3,970,000,000 cu. feet. The increase was more than accounted for by roundwood produce for industrial purposes, since that produced for non-industrial purposes, such as fuelwoo and wood for charcoal, declined. Lumber shipments rose from about 8,216,000 to 11,000,00 M ft. b.m. At the present time, British Columbia sawmills account for about two thir of all shipments of lumber in Canada and more than 60 p.c. of it is exported, mainly to th United States. The production of wood pulp also rose substantially, increasing 42 p.c to nearly 17,000,000 tons in 1968. Although the most important component of this tota continued to be groundwood pulp, 7,100,000 tons of which were produced primarily i Ontario, Quebec and the Atlantic Provinces, output of sulphate pulp increased by 124 p.c over the period to 6,100,000 tons. British Columbia produced most of the sulphate pul and it was in British Columbia, too, that the largest part of the increase in pulp outpu occurred. Pulp exports over the period increased from 24 p.c. to almost 30 p.c. of tota production. At present, about two thirds of these exports go to the United States.

Production of basic paper and paperboard also rose over the 1961-68 period, increasin 30 p.c. to reach 11,183,000 tons. About 71 p.c. of the 1968 total came from Ontario an Quebec and 15 p.c. from British Columbia. Newsprint, made chiefly in Ontario and Quebec is the most important paper commodity manufactured in Canada, followed in order b paperboard and book and writing papers. In 1968, pulp and paper exports made up 13 p.c of the value of all Canadian exports and, once again, the United States was the principa market for these commodities.

The value of factory shipments from veneer and plywood mills was 100 p.c. higher i 1968 than in 1961. In the earlier year, about 60 p.c. of the value of output ($129,300,000 was accounted for by British Columbia Douglas-fir veneer and plywood but by 1967 thi proportion had dropped to 56 p.c. On the other hand, plywood manufactured from othe British Columbia softwoods increased. Hardwood veneer and plywood made primarily i Ontario and Quebec from poplar, birch and maple accounted for 36 p.c. of the value of a factory shipments in 1961 and for 33 p.c. in 1968. Of the total value of exports of veneer an plywood, amounting to $86,000,000 in 1968, Douglas-fir plywood accounted for ove $45,000,000, about 71 p.c. of it going to Britain.

Section 1.—Forest Resources

Forest Regions.*—The forests of Canada cover a vast area in the north temperat climatic zone but wide variations in physiographic, soil and climatic conditions caus marked differences in their character; hence, eight fairly well-defined forest regions ma be recognized. These regions and their relative sizes are as follows:—

Region	Percentage of Forest Area	Region	Percentage of Forest Area
Boreal	82.1	Acadian	2.0
Great Lakes-St. Lawrence	6.5	Columbia	0.8
Subalpine	3.7	Deciduous	0.4
Montane	2.3		
Coast	2.2	Total	100.0

Boreal Forest Region.—This Region comprises the greater part of the forested area Canada. It forms a continuous belt from Newfoundland and the Labrador coast westwar to the Rocky Mountains and northwestward to Alaska. White Spruce and Black Spruc are characteristic species; other prominent conifers are Tamarack which generally range throughout, Balsam Fir and Jack Pine in the eastern and central portions, and Alpine F and Lodgepole Pine in the western and northwestern parts. Although the Boreal fores are primarily coniferous, there is a general admixture of deciduous trees such as White Birc

* A more detailed discussion of forest regions is given in Bulletin 123, *Forest Regions of Canada*, published by th Canadian Forestry Service of the Department of Fisheries and Forestry, Ottawa.

poplar; these are important in the central and south-central portions, particularly ng the edge of the prairie. In turn, the proportion of spruce and larch increases to the th and, with the more rigorous climate, the close forest gives way to an open lichen-odland which finally changes into tundra. In the eastern section, along the southern der of the Region, there is a considerable intermixture of species from the Great Lakes–Lawrence forest, such as Eastern White Pine, Red Pine, Yellow Birch, Sugar Maple, ck Ash and Eastern White Cedar.

Great Lakes–St. Lawrence Forest Region.—Extending inland from the edges of the Great es and the St. Lawrence River lies a forest of a very mixed nature which is characterized Eastern White Pine, Red Pine, Eastern Hemlock and Yellow Birch. With these are ociated certain dominant broadleaved species common to the Deciduous Forest Region, uding Sugar Maple, Red Maple, Red Oak, Basswood and White Elm. Other species n wide ranges are the Eastern White Cedar and Largetooth Aspen and, to a lesser extent, ch, White Oak, Butternut and White Ash. Boreal species such as White Spruce, ck Spruce, Balsam Fir, Jack Pine, poplars, and White Birch are intermixed, and Red uce is abundant in certain central and eastern portions. This Region extends in a west-rd direction into southeastern Manitoba but does not include the area north of Lake erior.

Subalpine Forest Region.—This is a coniferous forest located on the mountain uplands Alberta and British Columbia, from the Rocky Mountain range through the interior of tish Columbia to the Pacific Coast inlets. The characteristic species are Engelmann uce, Alpine Fir and Lodgepole Pine. There is a close relationship between the Subalpine est Region and the Boreal Forest Region, which also shares Black Spruce, White Spruce Trembling Aspen. There is also some penetration of Interior Douglas-fir from the ntane forest, and Western Hemlock, Western Red Cedar and Amabilis Fir from the stal forests. Other species are Western Larch, Whitebark Pine, Limber Pine and, on Coast Mountains, Yellow Cypress and Mountain Hemlock.

Montane Forest Region.—The Region occupies a large part of the interior uplands of tish Columbia, as well as a part of the Kootenay Valley and a small area on the east side he Rocky Mountains. It is a northern extension of the typical forest of much of the tern mountain system in the United States, and comes in contact with the Coast, umbia, and Subalpine Forest Regions. Ponderosa Pine is a characteristic species of the thern portions. Interior Douglas-fir is found throughout, but more particularly in central and southern parts; Lodgepole Pine and Trembling Aspen are generally present, latter being particularly well represented in the north-central portions. Engelmann uce and Alpine Fir from the Subalpine Forest Region, together with White Birch, are portant constituents in the northern parts. White Spruce, although primarily Boreal affinity, also grows here. Extensive prairie communities of bunch-grasses and herbs found in many of the river valleys.

Coast Forest Region.—This Region is part of the Pacific Coast forest of North America. entially coniferous, it consists principally of Western Red Cedar and Western Hemlock, h Sitka Spruce abundant in the north and Douglas-fir in the south. Amabilis Fir and low Cypress are represented throughout the Region and, together with Mountain Hem-k and Alpine Fir, are common at the higher altitudes. Western White Pine is found in southern parts, while Western Yew is in widely scattered groups. Deciduous trees, h as Black Cottonwood, Red Alder and Bigleaf Maple, have a limited distribution. butus and Garry Oak grow only on the southeast coast of Vancouver Island, the adjacent nds and mainland. The Arbutus is a broadleaved evergreen. Both are species whose tres of population lie southward in the United States.

Acadian Forest Region.—Over the greater part of the Maritime Provinces (excludi Newfoundland) there is a forest closely related to the Great Lakes–St. Lawrence forest a to a lesser extent, to the Boreal forest. Red Spruce is a characteristic though not exclus species, and associated with it are Balsam Fir, Yellow Birch and Sugar Maple, with so Red Pine, Eastern White Pine and Eastern Hemlock. Beech was formerly a more i portant forest constituent than at present, but beech bark disease has drastically redu Beech representation in Nova Scotia, Prince Edward Island and southern New Brunswi Other species of wide distribution are White Spruce, Black Spruce, Red Oak, White El Black Ash, Red Maple, White Birch, Grey Birch and poplars. Eastern White Ced although present in New Brunswick, is extremely rare elsewhere and Jack Pine is apparen absent from the upper St. John Valley and the western half of Nova Scotia.

Columbia Forest Region.—A large part of the Kootenay Valley, the upper valleys of Thompson and Fraser Rivers and the Quesnel Lake area of British Columbia contai coniferous forest, called the Columbia Forest Region, which closely resembles the Co Forest Region. Western Red Cedar and Western Hemlock are the characteristic spec in this interior "wet belt". Associated trees are the Interior Douglas-fir which has gene distribution and, in the southern parts, Western White Pine, Western Larch, Grand and Western Yew. Engelmann Spruce from the Subalpine Forest Region is important the upper Fraser Valley and is found to some extent at the upper levels of the forest in remainder of the Region. At lower elevations in the west and in parts of the Kooten Valley, the forest merges into the Montane Forest Region and in a few places into prai grasslands.

Deciduous Forest Region.—A small portion of the deciduous forest, which is widespre in the United States, extends into southwestern Ontario between Lakes Huron, Erie a Ontario. Here, with the deciduous trees common to the Great Lakes–St. Lawrence For Region, such as Sugar Maple, Beech, White Elm, Basswood, Red Ash, White Oak a Butternut, are scattered a number of other deciduous species which have their north limits in this locality. Among these are the Tulip-tree, Cucumber-tree, Pawpaw, R Mulberry, Kentucky Coffee-tree, Redbud, Black Gum, Blue Ash, Sassafras, Mockern Hickory, Pignut Hickory, Black Oak and Pin Oak. In addition, Black Walnut, Sycam and Swamp White Oak are confined largely to this Region. Conifers are few but there scattered distribution of Eastern White Pine, Tamarack, Eastern Red Cedar and East Hemlock.

The Grasslands.—Although not a forest region, the prairies of Manitoba, Saskatchew and Alberta support several species of trees in great numbers. Trembling Aspen for groves or "bluffs" around wet depressions, and continuous dense stands along the north boundary. Several other species of poplar are usually found along rivers and in mo locations, along with willows and some White Spruce. There are sporadic stands of Wh Birch, Manitoba Maple, Bur Oak and ash. In British Columbia, where the grasslands confined to deep valleys and low areas of the interior, there are scattered representatio of Ponderosa Pine, birches, poplars, spruce and Mountain Alder.

Forest Land.*—The forest area of Canada is estimated at 1,710,788 sq. miles, abo 56 p.c. of which is "productive" in the sense that it is capable of producing merchanta timber; the remainder is incapable of producing merchantable timber because of adve climatic, soil or moisture conditions or is reserve forest land for which no inventories available. Table 1 shows the areas of productive and non-productive forest land in ea province and territory; forest land in each province classified by type of growth is given Chapter X at p. 544.

* The figures given in this section will be affected by the results of more recent forest inventories that have b conducted by the provinces; later data will be available from the Canadian Forestry Service by mid-1971.

s at work in the Lake area of ver Island, B.C.

George Hunter

ood on its way mill at Shawini-gan, Que.

Malak

1.—Productive and Non-productive Forest Land, by Province

Province or Territory	Productive Forest Land	Non-productive Forest Land	Total
	sq. miles	sq. miles	sq. miles
ewfoundland	33,862	53,930	87,792
ince Edward Island	813	121	934
ova Scotia	15,080	1,194	16,274
ew Brunswick	23,887	442	24,329
uebec	220,625	157,500	378,125
ntario	164,568	97,174	261,742
anitoba	58,189	64,632	122,821
skatchewan	42,142	75,596	117,738
berta	116,572	41,023	157,595
itish Columbia	208,411	59,227	267,638
TOTALS, PROVINCES	884,149	550,839	1,434,988
ukon Territory	42,100	39,100	81,200
orthwest Territories	33,600	161,000	194,600
Canada	**959,849**	**750,939**	**1,710,788**

Inventories of the forest resources are made periodically by provincial forest authorities nd, with their co-operation, the Canadian Forestry Service of the Department of Fisheries nd Forestry compiles national statistics. The latest estimates of the total stand of mer-nantable timber, by province and region, appear in Table **2**. These estimates are subject o constant revision as more accurate and complete inventories are compiled.

2.—Estimate of Merchantable Standing Timber, by Type and Size and by Province and Region

Province and Region	Coniferous			Broadleaved			Totals		
	Large Material[1]	Small Material[2]	Total	Large Material[1]	Small Material[2]	Total	Large Material[1]	Small Material[2]	Total
	Million cu. ft.	'000 cords	Million cu. ft.	Million cu. ft.	'000 cords	Million cu. ft.	Million cu. ft.	'000 cords	Million cu. ft.
ewfoundland	2,125	136,400	13,719	244	3,922	577	2,369	140,322	14,296
Labrador	*1,105*	*70,000*	*7,055*	*77*	*2,353*	*277*	*1,182*	*72,353*	*7,332*
Island	*1,020*	*66,400*	*6,664*	*167*	*1,569*	*300*	*1,187*	*67,969*	*6,964*
ince Edward Island	20	1,829	175	7	800	75	27	2,629	250
ova Scotia	2,149	50,824	6,469	1,529	20,988	3,313	3,678	71,812	9,782
ew Brunswick	4,300	89,978	11,948	2,652	26,713	4,923	6,952	116,691	16,871
TOTALS, ATLANTIC PROVINCES	8,594	279,031	32,311	4,432	52,423	8,888	13,026	331,454	41,199
uebec	59,702	290,220	84,371	17,472	73,985	23,761	77,174	364,205	108,132
ntario	21,584	530,236	66,654	25,466	228,825	44,916	47,050	759,061	111,570
TOTALS, CENTRAL PROVINCES	81,286	820,456	151,025	42,938	302,810	68,677	124,224	1,123,266	219,702
anitoba	1,863	92,498	9,725	1,065	24,188	3,121	2,928	116,686	12,846
askatchewan	1,742	102,637	10,467	3,174	76,822	9,704	4,916	179,459	20,171
lberta	13,241	207,720	30,897	12,343	137,885	24,063	25,584	345,605	54,960
TOTALS, PRAIRIE PROVINCES	16,846	402,855	51,089	16,582	238,895	36,888	33,428	641,750	87,977
ritish Columbia	292,020	766,021	357,132	14,337	64,119	19,787	306,357	830,140	376,919
ukon Territory	926	76,000	7,386	180	18,700	1,770	1,106	94,700	9,156
orthwest Territories	600	112,000	10,120	424	41,000	3,909	1,024	153,000	14,029
Canada	**400,272**	**2,456,363**	**609,063**	**78,893**	**717,947**	**139,919**	**479,165**	**3,174,310**	**748,982**

[1] Ten inches D.B.H. (diameter at breast height) or over (suitable for saw timber). [2] Four to nine inches nits of 85 cu. ft.).

Tenure of Forest Land.—Corporations and private individuals own 9 p.c. of the pro ductive forest land of Canada and 91 p.c. is in the possession of the Crown in the righ of the federal or the provincial governments. Rights to cut Crown timber under lease o licence have been granted on 23 p.c. of the productive forest land; the remainder comprise unalienated productive forest areas and federal lands such as Indian reserves, militar reserves, etc.

Woodlots on the 430,522 farms (1966) across the country comprise about 3 p.c. of th total productive forest. These small wooded tracts, ranging in size from three or four acre to 200 or more acres, are among the most accessible forests in Canada. Also, the woodlot of Eastern Canada are, in general, highly productive because they lie in the southern par of the country and frequently occupy soils that are considerably higher in quality tha those typical of the northern forests.

3.—Tenure of Occupied Productive Forest Land, by Province

(Net area in sq. miles)

Province or Territory	Provincial Crown Land			Federal Crown Land	Privately Owned Land			Total Occupied Productive Forest Land
	Leases and Licences	Permits and Sales	Total	Total	Farm Woodlots	Other	Total	
Newfoundland	25,976	—	25,976	—	31	1,715	1,746	27,72
Labrador	*19,219*	—	*19,219*	—	—	—	—	*19,21*
Island	*6,757*	—	*6,757*	—	*31*	*1,715*	*1,746*	*8,50*
Prince Edward Island	—	6	6	3	417	382	799	80
Nova Scotia	1,148	19	1,167	31	2,130	9,525	11,655	12,85
New Brunswick	10,403	—	10,403	413	1,923	10,459	12,382	23,19
Quebec	77,805	—	77,805	225	6,678	18,436	25,114	103,14
Ontario	83,903	—	83,919[1]	96	5,086	11,105	16,191	100,20
Manitoba	1,488	600	2,088	320	2,327	1,489	3,816	6,22
Saskatchewan	1,815	1,000	2,815	592	2,216	2,081	4,297	7,70
Alberta	7,659	—	7,659	1,631	3,317	—	3,317	12,60
British Columbia	3,834	2,344	6,178	920	1,147	9,141	10,288	17,38
Yukon Territory	—	—	—	25	2	—	2	2
Northwest Territories	—	—	—	2	—	—	—	
Canada	**214,031**	**3,969**	**218,016**[1]	**4,258**[2]	**25,274**	**64,333**	**89,607**	**311,88**

[1] Includes 16 sq. miles of "other" provincial Crown land. [2] Of this total, 320 sq. miles are under lease licence—293 sq. miles in Alberta, the 25 sq. miles in the Yukon Territory and the 2 sq. miles in the Northwe Territories.

Canada's Forest Trees.—There are approximately 140 recognized tree species i Canada,* excluding the various subspecies and varieties. Of this number, 31 species ar conifers or 'softwoods', about two thirds of which are of commercial value; less than on fifth of the native broadleaved trees or 'hardwoods' can be considered as commerciall significant.

The most abundant forest trees in Canada, in terms of standing timber, are the spruce pines, true firs, poplars, hemlocks, birches, cedars, Douglas-fir, maples and larches. How ever, the economic importance of these species, except for the spruces, does not necessaril correspond to their abundance.

About one third of Canada's timber volume is spruce. White Spruce and Black Spruc range from the Atlantic Coast almost to the Pacific and northward into Alaska. Sitk Spruce, the largest of the native spruces, is found in the Pacific Coast area; Engelman Spruce is established farther inland, extending to the foothills of the Rockies in southwester Alberta; and Red Spruce is found only in Eastern Canada. Spruce wood is used extensivel for pulpwood, lumber and plywood.

Among the pines two species—Jack Pine and Lodgepole Pine—comprise 11 p.c. Canada's standing timber. Jack Pine grows from Nova Scotia to northern Alberta and th

* See *Native Trees of Canada*—7th Edition, Information Canada, Ottawa, 1969.

rthwest Territories and Lodgepole Pine is found in western Alberta, British Columbia l Yukon Territory. Eastern White Pine, which grows from the Atlantic to the eastern e of the prairies, and Western White Pine produce valuable softwood lumber. Pon- osa Pine, found in the drier areas of southern British Columbia, and Red Pine, found in stern Canada, are important commercial species.

The four native firs are all commercial species, although Balsam Fir far outranks the er species in this regard. It is the only fir found in Eastern Canada and ranges from wfoundland through all the provinces except British Columbia. Alpine Fir, essentially igh altitude tree, is found over a wide area in British Columbia and its range extends l into the western half of central Alberta and the Yukon. Amabilis Fir is a West Coast cies, while Grand Fir is found both in the Pacific coastal areas and in the interior of tish Columbia. Fir is commonly cut as pulpwood and, to a lesser extent, as sawlogs.

Douglas-fir, one of Canada's best known commercial trees, is not a true fir. The tree ponsible more than any other for British Columbia's world-wide reputation for timber he coastal form of Douglas-fir which is dominant in the forests of the province's lower astal areas. An interior form, known as Blue Douglas-fir, is used on a large scale for nber, plywood, construction timbers, piling and kraft pulp.

The poplars are the most abundant of the native broadleaved trees. They include embling and Largetooth Aspen, Balsam Poplar, and the three cottonwoods. The most dely distributed is Trembling Aspen, followed by Balsam Poplar; both species occur m Newfoundland to Alaska. The largest of the native poplars is Black Cottonwood; range covers the lower two thirds of British Columbia and extends well into Alberta to east in a pattern that follows the natural drainage basins. It also reaches as far north he Yukon along the coast. This species is in demand for veneer stock. Other cotton- ods—Eastern Cottonwood and its western form known as Plains Cottonwood, and rrowleaf Cottonwood—have a much narrower distribution.

Hemlocks, ranking fifth in volume of standing timber, have considerable commercial portance. Western Hemlock grows plentifully along the Pacific Coast and west of the ckies in the interior wet belt of British Columbia. It is one of the principal timber- ducing species in Western Canada and is also an important source of pulpwood. Eastern mlock is found from the Atlantic to western Ontario, although not in a wide or continuous tern. It is used to produce a number of products including pulpwood, plywood and nber. Mountain Hemlock is found in British Columbia in parts of the coastal forest d in the heavier rainfall areas of the interior.

Of the six native birches, only two are of commercial importance—Yellow Birch and hite Birch. Most abundant is White Birch which grows over a vast part of Canada from e Atlantic to the Pacific and extends up to the northern tree limit. One variety, Western per Birch, reaches heights of 100 feet and diameters of three feet or more. Yellow Birch a valuable hardwood species used extensively for flooring, veneer and plywood. Its nge reaches from the Atlantic to Lake Superior.

The native trees commonly known as 'cedars' include the Arbor-Vitae (Eastern White dar and Western Red Cedar), Yellow Cypress (Yellow Cedar) and a juniper (Eastern d Cedar). Together they make up an important group of commercial species. Eastern hite Cedar is found from Nova Scotia to Manitoba and as far north as James Bay in ebec and Ontario. Its wood, which is light and resistant to decay, is used for posts, es, boats and other purposes where timber is exposed to situations favourable to decay. stern Red Cedar is of major importance in British Columbia where it ranges from the cific Coast to the Rocky Mountains. It is used for lumber, exterior siding, shingles, es and posts, doors, window sashes and other purposes where resistance to decay is quired. Yellow Cypress—commonly called Yellow Cedar or Alaska Cedar—is found inly in the Pacific Coast region where it grows down to sea level in the more northerly tions. As it extends farther south, it seeks higher elevations. Its wood, like that of e other cedars, is valued in situations where resistance to decay is needed.

There are ten native species of maple, six of which are of commercial value. Only t species are known as hard maples, producing wood that is both hard and strong—Su Maple and the closely related Black Maple. Sugar Maple ranges from the Atlantic Lake Superior, while Black Maple is found mainly in southern Ontario. Hard maple co stitutes one of the most valuable commercial hardwoods in Canada. It is used for furnitu flooring, veneer, quality plywood, turnery and other specialized purposes where streng and hardness are needed. Sugar Maple and, to a lesser degree, Black Maple are tapped f the maple sugar industry. Bigleaf Maple is found on the lower Pacific Coast mainla and on Vancouver Island. The wood is only moderately hard and lacks strength b owing to the limited local supply of hardwoods, this tree is of some importance for furnitu and other specialized uses in the immediate area. Red Maple and Silver Maple are easte species. Red Maple ranges from Newfoundland to western Ontario, while Silver Maple concentrated mainly in southern Ontario and southwestern Quebec. Their wood is weak and softer than that of the hard maples and these trees are not important timber produce The Manitoba Maple, ranging from Ontario across the southern parts of Manitoba, S katchewan and southeastern Alberta, produces a soft, moderately light wood that is low strength. It is better known as a shelterbelt tree.

There are three species of larch in Canada. Two of them—Eastern Larch, bet known as Tamarack, and Western Larch—have commercial value. Tamarack is wid distributed from Newfoundland to the British Columbia–Yukon border and reaches f into the Northwest Territories. The wood is used for poles, posts, piling, boxes, cra and pulp. Western Larch, found mainly in southeastern British Columbia, is one of t important timber-producing trees of Western Canada. The wood, being hard and stro is used mainly in construction but is also made into flooring, interior and exterior furnishin and pulp.

Other trees of less commercial significance include oak, ash, beech, elm and basswo Valuable as the wood of these species may be, it is usually obtainable in limited quantit only. However, the species may have considerable local importance and they also co tribute greatly to the forest landscape.

Canada's total forest wealth is measured by the diversity as well as by the abundan of its trees. The better known species are the commercially exploited trees, but in t forest all species have a role to play in maintaining the ecological balance, controlling wa run-off and preventing soil erosion, and also in providing a habitat for native fauna a recreational facilities for all who wish to enjoy them.

Section 2.—Forest Depletion

General information on forest depletion and increment as well as statistics on for fires and fire losses are presented in this Section. The scientific control of the influen that account for wastage, such as forest fires, insect pests, etc., is dealt with in Section

Table 4 shows only the depletion of the forests caused by utilization and by fi Information on the extent of damage caused by agencies other than fire, such as insec disease and natural mortality, is not available. Losses from insects and diseases alo are estimated to be in excess of 1,000,000 M cu. ft. of merchantable timber annually.

The productive forests of Canada covering an area of 959,849 sq. miles constitute t reserve from which forest production will be obtained in the immediate future. T supply of merchantable timber on this area is estimated at 748,982,000 M cu. ft. and t average annual utilization in 1957-66 of 3,384,000 M cu. ft. therefore represented l than one half of one percent of the supply. However, it should be noted that utilizati does not occur evenly throughout the productive forest area but is concentrated on t relatively small area of occupied forest land (land under lease, licence or private own ship). Thus, overcutting may occur on many of these occupied areas, emphasizing t need for orderly management of all commercial forests if the forest industries are to mai tain their important position in the Canadian economy. Also, efficient utilization of c timber is an important factor related to forest depletion.

4.—Forest Utilization and Depletion by Fire, Ten-Year Average 1957-66

Item	Usable Wood	Percentage of Total Depletion
	'000,000 cu. ft.	
ducts Utilized—		
Logs and Bolts—		
Domestic use	1,878	48.8
Exported	12	0.3
Pulpwood—		
Domestic use	1,100	28.5
Exported	109	2.9
Fuelwood	228	5.9
Other products	57	1.4
Totals, Utilization	**3,384**	**87.8**
stage—		
By forest fires	469	12.2
Totals, Depletion	**3,853**	**100.0**

Forest Fire Statistics.—The number of forest fires reported in Canada during 1968 s substantially lower than that in the previous year—7,301 compared with 8,650. How- er, despite the lower fire incidence, most categories of forest fire statistics exceeded the responding ten-year averages. The 2,211,605 acres burned in 1968 were slightly below e ten-year average of 2,473,346 but the value of the forests destroyed, at $21,604,794, s 47 p.c. higher. Similarly, the cost of fire fighting, which amounted to $11,896,326 in 68, was 50 p.c. higher than the 1958-67 average of $7,938,772.

A regional breakdown of 1968 forest fire statistics indicates that, of all regions, Alberta perienced the most severe fire season. Although only 8.5 p.c. of the fires occurred in that ovince, it accounted for 45 p.c. of the area burned and 59 p.c. of the fire fighting costs and mages. It is significant to note that only 1,384 fires, or 19 p.c. of the 7,301 reported, were ributed to lightning compared with 2,055 or 27 p.c. of the 1961-67 average of 7,558.

5.—Forest Fire Losses, 1968, compared with Ten-Year Average 1958-67

Item	Average 1958–67	1968
es—No.	**7,195**	**7,301**
Under 10 acres "	6,037	6,269
10 acres or over "	1,158	1,032
ea Burned—acres	**2,473,346**	**2,211,605**
Merchantable timber "	597,999	547,225
Young growth "	534,094	365,187
Cut-over lands "	286,618	168,832
Non-forested lands "	1,054,635	1,130,361
erage Size of Fire—acres	**344**	**303**
rchantable Timber Burned—		
Saw timber—M ft. b.m.	1,428,217	664,578
Small material—cords	2,559,510	9,024,231
timated Values Destroyed[1] $	**14,662,020**	**21,604,794**
Merchantable timber $	9,591,126	17,392,199
Young growth $	3,401,361	1,949,198
Cut-over lands $	453,323	278,120
Other property burned $	1,216,210	1,985,277
tual Cost of Fire Fighting $	**7,938,772**	**11,896,326**
Totals, Damage and Fire Fighting Cost $	**22,600,792**	**33,501,120**
ea under protection—sq. miles	1,432,386	1,619,953

[1] Figures do not include such values as damage to soil, stream-flow, wildlife, recreation and tourist facilities.

6.—Forest Fire Losses, by Province or Area, 1968, compared with Ten-Year Average 1958-6

Province or Federal Lands	Averages 1958–67			1968		
	Fires	Area Burned	Fire Fighting Cost and Damage	Fires	Area Burned	Fire Fightin Cost an Damag
	No.	acres	$	No.	acres	$
Province—						
Newfoundland	214	215,290	1,258,605	166	21,669	346,
Prince Edward Island	[1]	[1]	[1]	[1]	[1]	[1]
Nova Scotia	486	7,013	77,458	920	7,776	139,
New Brunswick	414	14,161	333,366	731	7,736	524,
Quebec	877	129,029	3,096,386	1,164	324,539	5,361,
Ontario	1,469	145,393	4,585,074	1,219	9,461	371,
Manitoba	410	541,347	1,239,159	231	47,982	323,
Saskatchewan	292	423,193	1,449,707	349	177,493	2,488,
Alberta	483	72,008	2,429,235	617	989,375	19,621,
British Columbia	2,314	455,815	7,054,390	1,647	33,381	2,270,
Federal Lands—						
Yukon Territory	62	232,655	413,137	77	18,620	195,
Northwest Territories	121	228,841	615,763	117	566,952	1,680,
National parks	38	8,115	38,349	36	6,259	169,
Indian lands	[2]	[2]	[2]	[2]	[2]	[2]
Other federal lands (including military areas)	15	486	10,163	27	362	8,
Totals	**7,195**	**2,473,346**	**22,600,792**	**7,301**	**2,211,605**	**33,501,**

[1] Not reported. [2] Included in provincial figures.

7.—Forest Fires, by Cause, 1968, compared with Seven-Year Average 1961-67

Cause	Averages 1961–67		1968	
	No.	p.c.	No.	p.c.
Recreation	1,798	24	1,511	21
Settlement	893	12	924	13
Woods operations	273	4	335	4
Railways	361	5	407	6
Other industries	341	4	301	4
Incendiary	311	4	463	6
Miscellaneous known	1,083	14	1,430	20
Unknown	443	6	546	7
Totals, Man-caused	**5,503**	**73**	**5,917**	**81**
Lightning	2,055	27	1,384	19
Totals, All Fires	**7,558**	**100**	**7,301**	**100**

Section 3.—Statistics of Forest and Allied Industries

This Section is concerned with the many industries engaged in the felling of timber ar its transformation into a great variety of products required in modern living. The e tensive forests of Canada provide raw materials for several large and growing prima industries, i.e., the sawmills and planing mills, the shingle mills, the veneer and plywoo mills, the particle board plants and the pulp and paper mills, which in their turn provi raw materials for a wide range of secondary industries that convert the products of t primary industries into more highly manufactured goods such as sash, doors, millwor wooden boxes, furniture, converted papers and paper goods, etc. However, much of t output of the primary forest industries is exported: the sawmill industry and the pulp an

aper industry, especially, contribute substantially to the value of the export trade of anada and thereby provide an important part of the foreign exchange necessary to pay r the imports from other countries.

Statistics of manufacturing activity and total activity of the wood industries and the aper and allied industries may be found in a number of tables in Chapter XVI on Manuactures.

Subsection 1.—Logging Industry

The forests of Canada provide the raw materials for its sawmills and planing mills, ingle mills, veneer and plywood mills, particle board plants and pulp and paper mills s well as roundwood for export in unmanufactured state and other products such as elwood, poles and piling, fence posts, mining timber, Christmas trees, etc. Tables 8 nd 9 give the estimated quantities of wood cut in Canada, by province and by type of roduct. In estimating the annual cut, certain factors have been used to convert comercial units to cubic feet. These are as follows (British Columbia estimates are supplied y the British Columbia Forest Service):—

Product		Equivalent Volume in Cubic Feet		
		British Columbia		
		Coast	Interior	Other
Logs and bolts	M ft.b.m.	166.6	173.9	200
Pulpwood	cord	80	80	85
Fuelwood	"	80	80	80
Round mining timber	"	100	100	85
Wood for charcoal	"	...	...	80
Fence posts	No.	1	1	1.2
Fence rails	"	1	1	1

8.—Volume of Wood Cut, by Province, 1964-68

Province or Territory	1964	1965	1966	1967	1968
	M cu. ft.	M cu. ft.	M cu. ft.	M cu. ft.	M cu. ft.
Newfoundland	96,800	98,810	100,414	86,393	83,373
Prince Edward Island	6,072	6,685	6,663	5,862	5,715
Nova Scotia	104,640	106,792	108,209	106,923	128,209
New Brunswick	195,503	195,297	212,621	203,800	238,059
Quebec	933,096	935,709	994,015	999,655	963,090
Ontario	569,767	567,131	600,922[r]	607,085	590,964
Manitoba	39,402	42,491	43,407	35,922	39,183
Saskatchewan	39,370	45,403	46,387[r]	64,469	64,584
Alberta	124,475	126,584	130,268	111,265	130,769
British Columbia	1,514,595	1,533,113	1,602,437	1,572,599	1,702,455
Yukon and Northwest Territories	3,265	2,654	3,676	4,474	3,875
Canada	**3,626,985**	**3,660,669**	**3,849,019[r]**	**3,798,446**	**3,950,276**

9.—Volume of Wood Cut, by Type of Product, 1966-68

Type of Product	1966[r]		1967		1968	
	Quantity Reported or Estimated	Equivalent Volume in M cu. ft.[1]	Quantity Reported or Estimated	Equivalent Volume in M cu. ft.[1]	Quantity Reported or Estimated	Equivalen Volume in M cu. ft.[1]
Logs and bolts.....M ft. b.m.	12,632,537	2,250,304	12,556,813	2,237,537	13,381,404	2,381,574
Pulpwood.....cord	15,938,048	1,352,510	15,653,361	1,329,048	15,999,758	1,357,039
Fuelwood..... "	2,143,564	171,483	2,105,519	168,442	2,065,549	165,244
Poles and piling.....M cu. ft.	22,957	22,957	17,207	17,207	10,560	10,560
Round mining timber.....cord	66,293	5,662	57,442	4,898	48,551	4,138
Wood for charcoal..... "	36,567	2,925	29,000	2,320	26,000	2,080
Fence posts.....No.	19,513,161	23,357	21,087,955	25,202	17,591,667	20,918
Fence rails..... "	882,412	883	1,546,918	1,547	688,910	689
Miscellaneous roundwood...M cu. ft.	18,938	18,938	12,245	12,245	8,034	8,034
Totals.....	...	**3,849,019**	...	**3,798,446**	...	**3,950,276**

[1] See statement preceding Table 8.

Subsection 2.—Wood Industries

The standard industrial classification subdivides the wood industries group into the following industries: sawmills and planing mills, shingle mills, veneer and plywood mills, sash, door and other millwork plants, hardwood flooring mills, wooden box factories, the coffin and casket industry and miscellaneous wood industries. The latter item is further subdivided into the wood preservation industry, the wood handles and turning industry and miscellaneous wood industries, *n.e.s.*

The sawmills and planing mills, the shingle mills, the veneer and plywood mills and the particle board plants (the latter are included in the miscellaneous wood industries, *n.e.s.* group) mainly use roundwood as a raw material and sometimes are called primary wood industries and are dealt with separately below. The other industries, which constitute the secondary wood industries, further manufacture part of the production of the primary wood industries into a great variety of products. However, most of the production of the primary wood industries is not further processed.

Sawmill and Planing Mill Industry.—Lumber is by far the most important single product of this industry and, as shown in Table **10**, British Columbia is the most important province in this field. It should also be noted that the shipment figures of Tables **10** and **11** contain a certain element of duplication because sales of lumber from one sawmill to another will be reported as shipments by both establishments. Similar situations occur in most industries to a greater or lesser extent.

In addition to the lumber produced by the sawmill and planing mill industry, a small amount is produced by establishments classified to other industries, bringing total lumber production in Canada in 1968 to 11,351,000 M ft. b.m. compared with 10,329,425 M ft. b.m. in 1967.

—Lumber Production and Shipments and Value of All Shipments of the Sawmill and Planing Mill Industry, by Province, 1967 and 1968

Year and Province or Territory	Lumber			Value of Shipments of Goods of Own Manufacture
	Production	Quantity Shipped	Value of Shipments	
	M ft. b.m.	M ft. b.m.	$'000	$'000
1967				
wfoundland	11,464	17,599	1,460	2,015
nce Edward Island	3,524	1,295	98	[1]
va Scotia	182,079	188,636	14,926	18,175
w Brunswick	267,402	286,448	23,783	33,306
ebec	1,414,888	1,338,501	114,722	143,216
tario	770,781	690,414	67,499	87,623
nitoba	29,504	23,693	1,426	1,810
katchewan	81,473	85,941	6,030	7,783
berta	331,711	323,643	21,202	25,952
tish Columbia	6,864,835	7,374,785	551,750	639,372
kon and Northwest Territories	4,819	4,193	364	[1]
Canada	**9,962,480**	**10,335,148**	**803,262**	**959,782**
1968				
wfoundland	7,338	10,688	931	1,106
nce Edward Island	2,782	977	73	[1]
va Scotia	216,742	186,414	15,572	19,305
w Brunswick	266,199	281,284	24,886	35,518
ebec	1,611,553	1,539,348	135,075	167,536
tario	841,642	736,302	76,824	98,258
nitoba	33,866	28,849	1,849	2,210
katchewan	84,436	106,656	8,767	10,355
berta	341,626	385,520	29,950	35,389
tish Columbia	7,341,007	7,703,089	707,896	809,175
kon and Northwest Territories	7,332	7,904	584	[1]
Canada	**10,754,523**	**10,987,031**	**1,002,407**	**1,179,573**

[1] Confidential.

—Quantity and Value of Lumber Shipments of the Sawmill and Planing Mill Industry, by Species, 1966-68

Kind of Wood	1966		1967		1968	
	Quantity	Value	Quantity	Value	Quantity	Value
	M ft. b.m.	$'000	M ft. b.m.	$'000	M ft. b.m.	$'000
ruce	3,908,229	265,324	3,813,468	266,338	4,333,519	355,903
uglas-fir	1,952,703	149,694	1,956,150	153,867	1,980,009	189,275
mlock	1,883,237	136,016	2,126,046	159,764	2,098,327	191,320
lar	708,681	61,421	763,023	68,761	850,484	92,889
ite Pine	310,219	31,813	263,225	28,342	266,665	30,421
k Pine	331,004	22,255	295,076	21,352	339,692	26,640
ple	184,529	22,712	183,816	23,508	198,808	25,291
llow Birch	150,490	20,158	147,726	21,031	140,099	19,104
lgepole Pine	253,672	15,141	294,444	18,448	333,321	26,623
lsam Fir	183,409	12,764	133,320	9,962	143,510	12,787
her	351,761	30,475	358,854	31,889	302,597	32,154
Totals	**10,217,934**	**767,773**	**10,335,148**	**803,262**	**10,987,031**	**1,002,407**

Shingle Mill Industry.—Most of the shingles and shakes produced in Canada a from British Columbia mills. All establishments classified to this industry reported, f the year 1968, shipments of 2,492,309 squares of shingles and shakes valued at $43,225,72 of which British Columbia accounted for 2,393,736 squares valued at $42,231,745. Ho ever, it should be mentioned that considerable quantities are produced by establishmen classified to other industries and by individuals intermittently operating one or two shing machines or producing by hand; although no adequate measure of this production is ava able, it is known to contribute significantly to the total. Of the total production in 196 2,666,178 squares were exported, 2,619,323 squares going to the United States.

Veneer and Plywood Industry.—The production of hardwood veneer and plywo in Canada is confined largely to the eastern provinces and the production of softwood vene and plywood almost entirely to British Columbia. For the latter, Douglas-fir is most co monly utilized because of the availability of large-diameter logs of this species from whic large sheets of clear veneer can be obtained. Of the hardwoods, Yellow Birch is by far t most important species. Although most of the raw materials for this industry are Canadian origin, some decorative woods are imported, particularly walnut.

About 46 p.c. of the shipments of veneer, shown in Table **12**, are softwood veneer most of these are further manufactured into plywood by Canadian mills, thus contributi to the shipments of plywood shown in the same table. Some of the hardwood veneers a also shipped to other veneer and plywood mills for further manufacture or to other indu tries such as the furniture industry for veneering purposes, but a significant portion exported. Total exports in 1968 amounted to 1,051,269 M sq. ft. valued at $33,142,000, which 983,578 M sq.ft. valued at $28,780,000 went to the United States.

Most of the plywood is consumed in Canada, although exports are not unimportan in 1968 these amounted to 36,609 M sq. ft. of hardwood plywood valued at $6,818,000 a 690,263 M sq. ft. of softwood plywood valued at $46,122,000. The greater part of the e ports of hardwood plywood went to the United States (33,466 M sq. ft. valued at $6,085,00 but most of the softwood plywood exports went to Britain (489,301 M sq. ft. valued $32,401,000).

12.—Veneer and Plywood Shipments, by Type, 1966-68

Type	1966		1967		1968	
	Quantity	Value	Quantity	Value	Quantity	Value
	M sq. ft.	$'000	M sq. ft.	$'000	M sq. ft.	$'000
Veneer	2,404,617[1]	46,222	2,294,661[1]	48,330	2,582,055[1]	55,450
Softwood plywood	1,722,518[2]	132,931	1,791,435[2]	142,648	1,953,735[2]	163,513
Hardwood plywood	401,137[3]	40,563	382,754[3]	38,938	375,058[3]	41,293

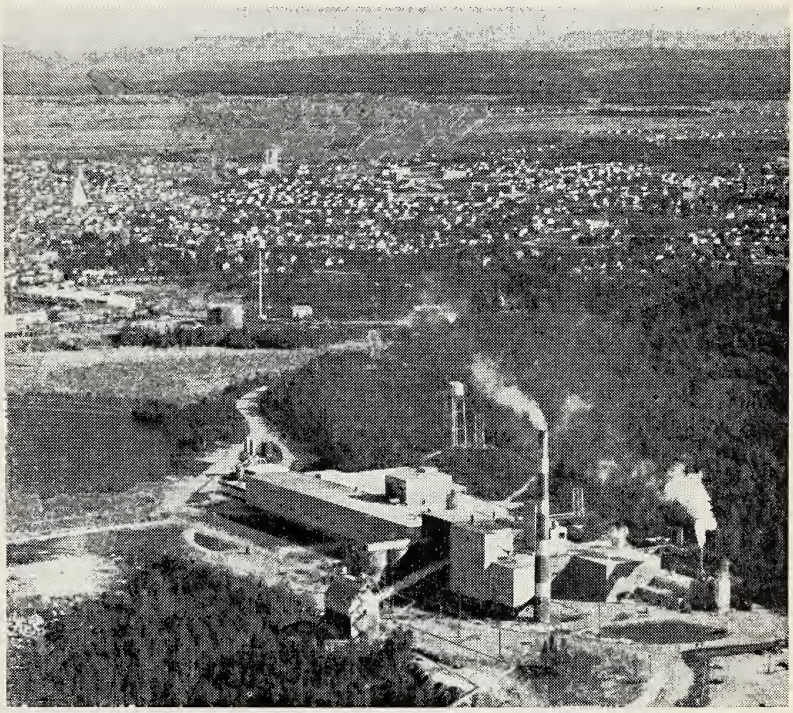
[1] Surface measure. [2] $\frac{3}{8}$″ unsanded basis. [3] $\frac{1}{4}$″ sanded basis.

Subsection 3.—Paper and Allied Industries

The standard industrial classification subdivides the paper and allied industries grou into the following industries: the pulp and paper industry, the asphalt roofing manufa turers, the paper box and bag manufacturers, and other paper converters. Statistics manufacturing activity and total activity of the paper and allied industries group a given in Chapter XVI on Manufactures .

Pulp and Paper Industry.—This industry is by far the most important of the group. fact, it has been for many years the leading industry in Canada, contributing about .c. of the total gross national product and over 13 p.c. (1968) of the total value of the ntry's exports. There were 137 pulp and paper mills in operation in 1968.

These mills consume enormous quantities of roundwood, 18,371,821 rough cords with ost value of $523,343,000 being so used in 1968. In that year, 115,000 cords of pulpwood e imported and 1,059,000 cords were exported. In addition, the pulp and paper mills wood residues of the sawmill and other industries for pulping, such as cores of peeler , slabs and edgings or wood chips made thereof, shavings, etc., and recently even saw- t has been used successfully for this purpose. The total of such wood residues used by industry in 1968 amounted to the equivalent of 6,907,744 rough cords of pulpwood, ued at $143,322,000. The industry also consumes large amounts of electric power, micals and other goods and services and requires great quantities of clean water.



paperboard nquière, Que. mills ac- more than f the world pulp, paper rboard which 40,000,000 70. The ben- this export felt in every the country.

Some of the production of the pulp and paper industry is consumed in Canada or ves as a raw material for the paper-using or secondary paper and allied industries and tain other industries, but a great part of it is exported, particularly newsprint and various es of pulp (see Table **15**), most of it to the United States. Some plants included in the p and paper industry classification also convert basic paper and paperboard into more hly manufactured papers, paper goods and boards but their output represents only a all part of Canada's total production of converted papers and boards. Tables **13** and give shipment and production figures for pulp and shipment figures for basic paper and perboards for 1964-68 and Table **15** shows exports of pulp and of newsprint to Britain, ited States and all countries for 1965-69.

13.—Pulp Shipments and Production, 1964-68

Item		1964	1965	1966[r]	1967	1968
Mill Shipments of Pulp[1]	'000 tons	**4,412**	**4,650**	**5,066**	**5,150**	**5,9**
	$'000	**548,505**	**592,238**	**630,154**	**630,604**	**719,39**
Groundwood pulp	'000 tons	321	330	319	257	25
	$'000	21,968	22,421	21,662	16,227	15,76
Chemical pulps	'000 tons	4,062	4,296	4,731	4,873	5,70
	$'000	525,790	569,195	619,895	613,877	703,20
Pulp Production[2]	'000 tons	**13,742**	**14,573**	**15,958**	**15,857**	**16,76**
Quebec	"	5,204	5,450	6,022	5,802	5,91
Ontario	"	3,317	3,357	3,587	3,619	3,64
British Columbia	"	2,827	3,275	3,669	3,868	4,37
Other provinces[3]	"	2,393	2,491	2,680	2,568	2,82

[1] Includes screenings. [2] The differences between these figures and the quantities of mill shipments present the amounts of pulp further manufactured by the reporting companies. [3] Prince Edward Island is only province in which there is no production.

14.—Shipments of Basic Paper and Paperboard, by Type and by Province, 1964-68

Type and Province		1964	1965	1966	1967	1968
Type						
Newsprint paper	'000 tons	7,377	7,841	8,493	8,108	8,20
	$'000	887,613	927,832	1,025,048	998,019	1,015,79
Book and writing paper	'000 tons	491	535	621	628	66
	$'000	138,157	150,289	176,278	184,944	187,14
Wrapping paper	'000 tons	340	360	413	458	45
	$'000	76,431	80,240	89,685	93,314	92,22
Paperboard	'000 tons	1,297	1,420	1,534	1,567	1,62
	$'000	187,772	202,175	220,584	228,365	239,71
All other papers	'000 tons	200	171	183	203	22
	$'000	34,138	29,374	32,979	38,082	39,74
Totals	'000 tons	**9,705**	**10,327**	**11,243**	**10,963**	**11,18**
	$'000	**1,324,111**	**1,389,910**	**1,544,576**	**1,542,726**	**1,574,61**
Province						
Quebec	'000 tons	4,236	4,463	5,003	4,885	5,03
	$'000	567,560	597,420	686,562	688,064	701,75
Ontario	'000 tons	2,729	2,810	2,935	2,906	2,89
	$'000	411,591	423,496	456,241	462,534	471,80
British Columbia	'000 tons	1,315	1,521	1,603	1,609	1,66
	$'000	169,468	185,423	195,471	199,399	205,85
Other provinces[1]	'000 tons	1,425	1,533	1,702	1,563	1,59
	$'000	175,493	183,571	206,302	192,730	195,21

[1] Prince Edward Island is the only province in which there is no production.

15.—Exports of Pulp and of Newsprint to Britain, United States and All Countries, 1965-69

Commodity and Year	Britain		United States		All Countries	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	$'000	tons	$'000	tons	$'000
Pulp						
1965	347,167	40,404	2,812,616	370,380	3,852,650	493,50
1966	323,766	35,588	2,977,846	390,760	3,854,000	492,96
1967	272,543	32,318	2,902,256	382,446	4,269,005	543,43
1968	315,271	37,825	3,128,341	416,807	4,971,322	627,87
1969	288,050	36,158	3,807,044	514,242	5,794,575	753,48
Newsprint						
1965	370,372	46,932	6,112,414	735,611	7,189,700	869,58
1966	384,034	48,883	6,652,270	823,664	7,821,148	968,22
1967	336,041	43,642	6,340,321	815,780	7,463,801	955,26
1968	438,471	54,862	6,138,552	438,471	7,479,000	989,83
1969	486,916	60,616	6,525,512	486,916	8,235,000	1,125,80

World Pulp and Newsprint Statistics.—Figures of production, exports and imports pulp for certain countries of the world are shown for 1966 and 1967 in Table **16.** It is imated that these countries produced 71.5 p.c. of the world supply of pulp in 1967.

16.—Production, Exports and Imports of Pulp, by Leading Countries, 1966 and 1967

(SOURCE: FAO *Year Book of Forest Products Statistics*)

Country	1966			1967		
	Production	Exports	Imports	Production	Exports	Imports
	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
ıada[1]	**16,000**	**4,084**	**58**	**15,767**	**4,268**	**36**
ted States	35,621	1,551	3,335	35,478	1,720	3,141
land	6,288	2,444	6	6,302	2,341	8
way	1,997	933	82	1,984	904	1,135
eden	7,221	3,995	6	7,548	3,893	6

[1] Production figures differ slightly from DBS figures given in Table **13** because of a different basis of calculation.

Figures for the leading newsprint-producing countries for 1966, 1967 and 1968 are en in Table **17.** The seven countries listed accounted for over 81 p.c. of the estimated rld production in 1968, Canada contributing over 39 p.c.

17.—Estimated World Newsprint Production and Exports, by Leading Countries, 1966-68

(SOURCE: Newsprint Association of Canada)

Country	1966		1967		1968	
	Production	Exports	Production	Exports	Production	Exports
	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
ıada[1]	**8,419**	**7,764**	**8,051**	**7,330**	**8,031**	**7,422**
ited States	2,408	99	2,620	90	2,935	129
an	1,301	26	1,460	7	1,622	6
land	1,330	1,210	1,201	1,091	1,227	1,131
tain	825	3	788	2	811	2
ion of Soviet Socialist Republics	972	197	1,065	205	1,120	241
eden	760	474	762	465	844	555

[1] Figures differ slightly from DBS figures given in Tables **14** and **15** because of different bases of calculation.

Asphalt Roofing Manufacturers.—These establishments produce composition ofing and sheathing, consisting of paper felt saturated with asphalt or tar and, in some ses, coated with a mineral surfacing. They also produce asphalt, vinyl-asbestos and re vinyl floor tiles. Their total shipments in 1968 were valued at $58,567,000 compared th $59,533,000 in 1967.

Paper Box and Bag Industries.—These industries include manufacturers of folding rtons and set-up boxes, manufacturers of corrugated boxes and manufacturers of paper gs. Their total shipments in 1968 amounted, respectively, to $166,486,000, $240,045,000 d $170,083,000, compared with $161,546,000, $229,438,000 and $157,006,000, respectively, 1967.

Other Paper Converters.—This group produces a host of paper products such as velopes, waxed paper, clay-coated and enamelled paper and board, aluminum foil lami-ted with paper or board, paper cups and food trays, facial tissues, sanitary napkins, paper welling and napkins, toilet tissue, etc. The total value of manufacturing shipments this industry in 1968 amounted to $339,960,000 compared with $322,608,000 in 1967.

Section 4.—Forest Administration, Research and Conservation

Subsection 1.—Federal Forestry Program

Administration.—The Federal Government is responsible through several depa ments and agencies for the protection and administration of the forest resources in t Yukon and Northwest Territories and on other federal lands such as the national par Indian reserves, military areas and forest experiment stations.

The primary federal organization concerned with forestry is the Canadian Forest Service of the Department of Fisheries and Forestry. The Canadian Forestry Servi was formerly the Forestry Branch of the same department, the change in name becomi effective in 1969. The main functions of the Service under the Forestry Developme and Research Act include: (1) conducting research relating to the protection, manageme and utilization of the forest resources of Canada and the better utilization of forest product (2) undertaking, promoting and recommending measures for the encouragement of publ co-operation in the protection and wise use of the forest resources of Canada; (3) enteri into agreements with provincial governments and individuals relative to forest managemer protection or utilization, for the conduct of research relating thereto, or for forest publici or education; (4) providing forest surveys and advice on protection and management federally administered forest lands; and (5) assuming responsibility for forest protecti and management on federal lands at the request of the department or agency concerne

Heading the Canadian Forestry Service is an Assistant Deputy Minister responsib to the Deputy Minister of the Department. Reporting to the Assistant Deputy Minist are the Directors of Coordination, Operations, and Forestry Relations. The three Directo are responsible respectively for program development, co-ordination and control; the contr and co-ordination of management resources (including personnel, finances and facilities and forestry matters involving other federal and provincial government departments well as national and international agencies and organizations. Within the Service the are seven research institutes undertaking work which, for the most part, has broad nation applications. This research supports and complements the activities of six regional fore research laboratories serving Newfoundland, the Maritimes, Quebec, Ontario, the Prairi and British Columbia. In 1969, the former Alberta–Northwest Territories–Yukon Regi and the Manitoba–Saskatchewan Region were combined to form the new Prairies Regi with headquarters in Edmonton, Alta. Forest products research is conducted at two fore products laboratories—one located at Vancouver, B.C., and the other at Ottawa, On

The forestry program of the Canadian Forestry Service falls within three categories– forest resource research and services, forest products research and services, and support university research.

Forest Resource Research and Services.—The work undertaken in this categor covers research, surveys and related services pertaining to forest land and forest soil forest inventory and mensuration; silviculture and tree biology; timber harvesting; prote tion against fire, insects and diseases; and forest economics.

Research in forest land is directed largely toward establishing practical land classific tion systems for forestry purposes. This work is an integral part of the Canada Land I ventory and the Bio-physical Land Classification System. In forest-soils research, progra dealt with include soil chemistry, soil biology and the hydrologic characteristics of wate sheds but, currently, considerable emphasis is being given to forest fertilization and relate mineral-nutrition studies.

Considerable attention is devoted to improvement of forest inventory technique large-scale aerial photography, combined with a radar altimeter, has been developed t the point where it is in operational use in a forest inventory of Labrador. Research in ne techniques of remote sensing for forestry purposes is accelerating, and the possibility c

ra-small-scale, high-altitude aerial photography and satellite photography is being vestigated. Studies of growth and yield, the evaluation of site potential, and the develop- nt of mathematical models for trees and forests are continuing.

A substantial portion of the research program in silviculture involves the study of tors responsible for the success or failure of natural regeneration following various thods of cutting and treatment of seedbeds; the development of improved methods of generating forest stands following logging or fire; and the establishment of forests on andoned farmland, heathland or bogland. Different methods of seeding and planting e being compared, and increased emphasis is being given to problems associated with ntainer planting. The effects of mechanization of logging on reproduction and on slash d soil conditions are being investigated. Studies of different methods of stand-tending ch as pruning, cleaning and thinning are under way to determine means of increasing th quantity and quality of wood production. Investigations of successional changes are progress in most of the important forest types, and the relation of forest growth to site being studied with a view to the assessment of long-term productivity. The light, mperature and moisture conditions required to produce optimum growth and development various tree seedlings are being determined to provide guidelines for improved forestry actices. In tree breeding, superior strains are selected or developed, and there is con- nual improvement in propagation and breeding techniques.

Research on timber harvesting has been intensified by work conducted within the newly tablished logging development program of the Forest Management Institute. The jective of this work is to improve logging productivity and reduce the cost of wood deli- red from the standing forest to the consuming mills.

Adequate protection of forests against fire is of vital importance in Canada. The rvice works in full co-operation with provincial forest services in almost all phases of rest fire control and has made major contributions in the fields of forest fire danger easurement and forecasting and in fire control planning. Investigations are being made forest fire behaviour, of the use of prescribed fire for hazard reduction and seedbed eparation, of better methods of reporting forest fires, and of fire damage appraisal and lated factors in forest protection standards. Studies are being continued in the use of emicals for fire suppression and pre-suppression, of fire fighting equipment and techniques, d of the use of aircraft in forest fire control. Another important field of endeavour is the udy of fire hazard created by slash from various kinds of logging practices for different ecies.

Research on forest insects and diseases is conducted at Service regional laboratories d field stations throughout Canada. A Canada-wide survey is undertaken in co-opera- n with the provincial forest services and forest industries to maintain an annual census forest insect and disease conditions and to detect and predict the occurrence of outbreaks. rvey results are made available to owners and operators of forest lands for use in planning lvage programs and directing control measures to reduce damage.

Laboratory research programs are designed to lead to comprehensive understanding the biology and ecology of the more destructive forest insects and fungi, and the causes fluctuations in abundance or severity of damage in time and place. Problems under tensive study include insect defoliators, leaf diseases, sucking insects, dwarf mistletoes, em cankers, bark- and wood-boring beetles, trunk and root decays, tip- and root-boring sects, and diseases of tree seedlings in forest nurseries. Research on development, ysiology, nutrition and taxonomy complements the field ecological studies of insects and ngi. Problems of national importance in insect pathology, cytology and genetics, bio- matology and chemical control are investigated.

Experiments are also carried out in insect and disease control, utilizing cultural tech- ques, chemicals and biological control agents including parasites, predators and insect thogens. Technical advisory services are provided in evaluating quarantine programs, ssibilities of eradication or control, or other applications of research results. Examples clude recommendations for reduction of seedling losses in forest tree nurseries through

A technician mounti specimens for the inse tary collection at t Forestry Research La oratory, Victoria, B. C

cultural techniques and chemical applications; the co-operative organization of cull survey to improve forest inventories; consultation and advisory services for local authorities c the Dutch elm disease problem; and technical co-operation with provincial governmen and industrial agencies in the organization of spraying operations against the spruce bu worm in New Brunswick, the ambrosia beetle in British Columbia, and the red-headed pi sawfly in Ontario and Quebec.

Current research in the economics of forest resources includes compilation and asses ment (on a national basis) of provincial forest inventories, an investigation concerning th size and seasonal distribution of a mobile airtanker fleet, studies of supply and deman prospects for Canada's timber, assistance in multiple use land planning, work on the us of linear programming as a macro management tool, and an assessment of the birch resour in Canada. In the field of communication and service, other studies are proceeding o economic indicators in forestry and forest-based industries, on short-term lumber pric predictions, and on lumber consumption forecasts.

Forest Products Research and Services.—This work is directed toward obtainin background data on the properties of Canadian woods, developing new and better uses fo wood products, improving methods of processing, and effecting more complete utilizatio of wood substances. Activities cover all major aspects of forest products and includ the determination of the physical, mechanical, chemical and anatomical properties c wood and their relation to adaptability in use; studies of factors affecting quality of woo and of manufactured wood products; determination of factors that cause wood waste i logging and manufacturing; investigation into fire retardant treatments, the preservativ treatment and painting of wood and the use of wood for the manufacture of a variety c products by chemical or mechanical means; and studies to determine possible new economi and more valuable uses for woods and to determine methods for the economical utilizatio of all wood substances available from the annual timber harvest.

The program is conducted mainly at two laboratories—Ottawa and Vancouver—wit research units covering timber engineering, containers, glues and gluing, veneer and ply

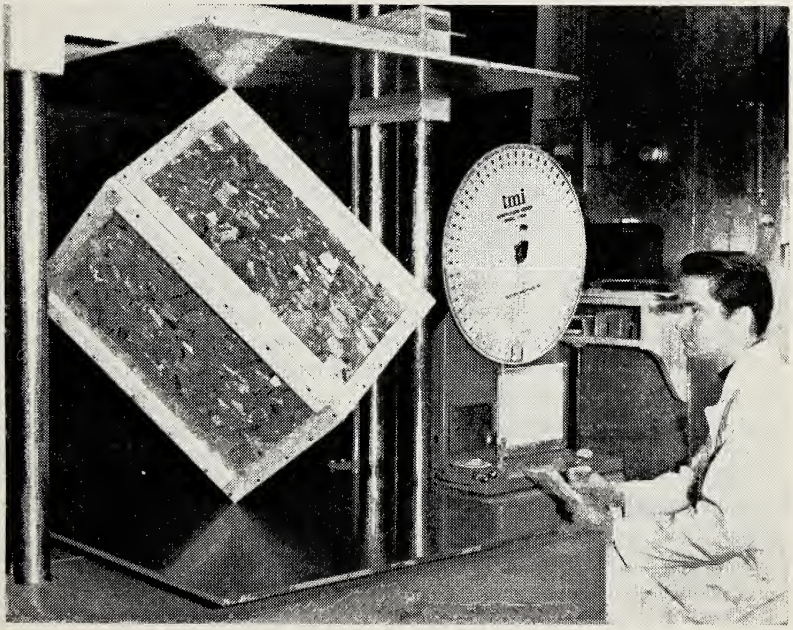
od, timber physics, wood chemistry, pulping, wood preservation, paints and coatings, od pathology, products entomology, wood anatomy, logging, lumber manufacture and ıber seasoning. Research results are made available to the thousands of plants com-sing Canada's timber-manufacturing and wood-using industries. Liaison is maintained h these industries to ensure that the research being conducted is of optimum national ıefit. There is also constant co-operation with various government units in conducting ny investigations concerned with wood use. Research into the use of wood in housing ıstruction and as an engineered material continues in co-operation with the National search Council and the Central Mortgage and Housing Corporation.

A number of regional establishments have forest products liaison officers who visit ymills and other wood-working plants to keep industry aware of research developments l technical advances and to ensure that the Service is informed of field problems on ich research would be of value.

Continuing research on the economics of forest products covers a survey of lumber and od-based panel products utilized in residential dwellings, together with a study of possible ure markets for lumber and plywood.

Service personnel serve on many national and international technical committees ıcerned with forestry problems, and continuous collaboration is maintained with forest oducts laboratories in other countries for the dual purpose of exchanging information and oiding duplication of research.

Support of University Research.—Operating grants are made available to the four nadian forestry schools to assist their development through support of research conducted faculty members and post-graduate students.



Testing the durability of a packing box constructed of particle board in the Forest Products Laboratory at Ottawa, where new uses for wood in many forms are under constant study.

Subsection 2.—Provincial Forestry Programs

All forest land in provincial territory, with the exception of the minor portions national parks, federal forest experiment stations, military areas and Indian reserv is administered by the respective provincial governments. The forestry program of ea province is outlined below.

Newfoundland and Labrador.—Geographically, the Province of Newfoundla has two separate regions—the Island and Labrador on the mainland. The producti forest land is estimated at approximately 30,000 sq. miles about equally divided betwe the Island and Labrador. Most of Labrador's forests are leased but are as yet virtual untouched.

A large part of the forest land of the Island is leased, licensed or owned by pap companies, but a three-mile-wide belt along most of the coastline is retained as unoccupi Crown land for the purpose of providing firewood, construction material, fencing materi etc., for the local populations. Within this coastal forest belt, every form of cutting generally without intense control or restriction but a policy is being introduced wherel cutting in certain 'management areas' is controlled by Forest Service Officers. Appro mately one half of the Crown forests are at present under management. Commerc timber-cutting on unoccupied Crown lands has been by permit since 1952; permits f amounts up to 120 cords per person are issued by the field staff but permits for larg quantities must be approved by the government.

The Island is divided into three forest regions, each of which is subdivided into fi districts. Each region is under the control of a regional forester and each district is head by a district ranger with a staff of rangers and assistant rangers. Twenty-four we equipped forest fire depots and nine lookout towers, connected by radiotelephone to distri and regional offices, are operated by the Newfoundland and Labrador Forest Servic others are operated by the two paper companies which maintain their own forest fi protection organizations.

Forestry operations in Labrador are under the supervision of a regional ranger locat at Happy Valley (Goose Airport). Forest fire protection bases are located near Goo Airport and at Labrador City, Churchill Falls, Cartwright and Makkovik.

The Forest Service operates 10 fixed-wing aircraft for forest fire detection and su pression and three helicopters for transporting men and equipment. The permane Forest Service staff of approximately 130 persons is enlarged during the fire season with t addition of about 70 seasonal employees.

Prince Edward Island.—Roughly one third of Prince Edward Island's 2,184 s miles of land is tree-covered. The wooded areas consist of scattered patches througho the province, the greatest concentration being in the eastern section. All of the woodla is privately owned except some nine square miles of federal Crown land.

The Forestry Branch of the Department of Agriculture administers all forestry matte in the province—reforestation, protection and woodlot improvement. The reforestati program has been increasing year by year, as many as 500,000 trees being planted in o year on provincially owned and privately owned land. The Forest Nursery is being e panded and by 1975 will be providing some 6,000,000 trees annually.

The forest management programs include the provision of access roads into Crov land areas and woodlot improvement; improvement cuts act as demonstration areas for t public and for 4-H Forestry Clubs and Boy Scout and Girl Guide groups. Fire protecti is not too serious a problem in this province as wooded areas are relatively small and sca tered and are all accessible by road so that equipment can be rushed to the scene of a fi quickly and easily.

Nova Scotia.—Of Nova Scotia's land area of 20,402 sq. miles, 16,274 sq. miles are sed as forested and 93 p.c. of the latter is regarded as productive. Although 91 p.c. he forest land in Canada is held by the Crown in the right of the federal and provincial ernments, only 22 p.c. is so held in Nova Scotia. To promote education and dialogue ong various forest users, representative county Forest Practices Improvement Boards being set up.

The provincial Crown lands are administered by the Department of Lands and Forests ough a staff of foresters and rangers. Trained provincial personnel are also employed h some of the forest industries in the administration of privately owned forest lands. e Department administers the Lands and Forests Act as it pertains to all lands, and is onsible for forest fire suppression. Forest fire detection is facilitated through 35 ervation towers and an aerial patrol service. In 1969, 623 forest fires burned 2,812 es. Three fires exceeded 50 acres, and 36 p.c. were under $\frac{1}{4}$ acre. Fire suppression ws and rangers with equipment are stationed throughout the province.

The forest industry is of prime importance to the economy of Nova Scotia, contributing ctly or indirectly over $100,000,000 to the gross provincial product annually. There are peration some 350 sawmills of various types and sizes, one hardboard mill, two ground- d pulp mills, and two chemical pulp mills. These mills processed 230,000 M ft. b.m. awn materials and 910,000 cords of round products in 1969, including 120,000 cords- ivalent of pulp chips from sawmill residues. In addition, 90,000 cords of pulpwood e exported.

The reforestation program, active since the 1930s, is being expanded. Experimental k on bullet planting, direct seeding, soil capability and site preparation continues. dbeds have been laid for a threefold increase to 3,000,000 seedlings by 1973.

Timber, pulpwood and Christmas trees are sold through public tender, and cutting on wn lands is done under recommendation of district foresters of the Department of Lands Forests. Management cruises, regeneration studies and experimental cuttings are ducted on Crown lands, and a program of operating these lands under sustained-yield nagement plans is under way. Silvicultural techniques, including thinning, conversion ing, aerial and ground fertilization, bog-ploughing and the use of silvicides, were applied 2,500 acres of Crown lands in 1969.

A new provincial forest inventory, which is a continuous system designed to operate a seven-year cycle, was in its third year in 1969. Concurrently, a system of 1,750 manent sample plots, due for completion in 1970, will provide continuing data on growth drain. Aerial colour photographing of Cape Breton Island was done in 1969.

Forest research is carried on by Federal Government agencies and the Nova Scotia earch Foundation. Investigations cover stand improvement, tree nutrition, cutting hods, and insect and disease activities. Extension projects include fire prevention, a program for schools, distribution of information on forest and wildlife conservation, motion of the Christmas tree industry, woodlot improvement, preparation of material the mass media, and technical assistance to sawmill operators.

New Brunswick.—Of the total land area of New Brunswick (27,835 sq. miles), roximately 86 p.c. is classed as productive forest, of which the Crown, in right of the vince, owns about one half. About 2 p.c. is owned by the Federal Government and remainder is privately owned. The results of a provincial forest inventory, part of national forest inventory, were published in 1958. The total volume of standing ber in the province is estimated at 16,871,000 M cu. ft.; coniferous species make up 71 and deciduous species the remainder.

Protection from forest fires, the first requirement for forest conservation, is mainly responsibility of the Department of Natural Resources which also carries out duties connection with game management and protection, provincial parks, mines, water, rism and the administration of provincial Crown lands. A large-scale aerial spraying

program to protect balsam fir and spruce from the spruce budworm has been carried since 1952 by a Crown company sponsored by the federal and provincial governments a by representatives of the forest products industries. Forest Management Licen authorize operators to cut and remove forest products in accordance with forest mana ment plans and cutting permits. Royalty is paid to the province when products are by the licensees.

New Brunswick does not maintain a forest research organization but co-opera with the Canadian Forestry Service in that field. The University of New Brunswick l also undertaken a small number of forest research projects in co-operation with the Natio Research Council, the provincial government and other interested organizations.

In the field of education, the University of New Brunswick offers undergraduate a graduate courses in forestry leading to B.Sc.F. and M.Sc.F. degrees. It is also responsi for the administration of the Maritime Forest Ranger School in conjunction with Governments of New Brunswick and Nova Scotia and with private industry. The for extension services of the University assist both government and private agencies in direction and planning of various forestry extension programs. The provincial Departm of Agriculture also provides an expanding extension service to the owners of farm woodl

Quebec.—Well over half of Quebec's area of 594,860 sq. miles is under forest, stretch from the southern border northward to an irregular line roughly following the 54th paral and from the Ontario border in the west to the Atlantic coast in the east. Of the to forested area, about 93 p.c. is publicly owned and the remainder privately owned. Ab 64 p.c. of the publicly owned forest is "open forest", 26 p.c. is under timber lease and 10 is set aside for particular use. All forests serve to feed the province's large pulp and pa mills and numerous sawmills but, at present, about 25 p.c. of the annual cut comes fr privately owned land. A preliminary inventory has recently been completed of the publi owned forests and operations there are now under way in the accessible regions of north Quebec; these forests are subject to a general management plan of cutting and conservat under which they will be able to supply the ever-increasing demand for forest produ

The management of the publicly owned forests, their development, control and su vision, is the function of the Woodlands and Forestry Branch of the Department of La and Forests, which also, in certain circumstances and when it is in the public interest do so, manages privately owned forests. The Branch administers a number of tree nurs operations which provide some 100,000,000 seedlings annually for reforesting areas throu out the province where natural regeneration is inadequate. The Conservation Bran either directly or through various organizations, looks after fire protection and insect disease control.

Since Quebec's forests provide some 25 p.c. of the gross value of production in the pr ince, their importance is such that their management merits intensive consideration a study. Thus, the Department of Lands and Forests considers that periodic review of program is essential to keep abreast of progress in the various sectors of the forest indust to bring about a maximum output from its forest capital, and to enable the industry to m the constantly changing and increasing demands of the world market.

Ontario.—The boundaries of Ontario enclose an area of 412,582 sq. miles—83 land and 17 p.c. water. Forest lands comprise 75 p.c. of all the land, of which 164,600 miles are classified as productive. The Crown owns 90 p.c. of the productive forest la Although 84 tree species (exclusive of the hawthorns) occur within Ontario, four spe (Black Spruce 29 p.c., poplars 19 p.c., Jack Pine 13 p.c., and White Birch 11 p.c.) acco for almost three quarters of the total volume of standing trees. The total volume of m chantable standing timber is estimated at 111,000,000 M cu. ft.—60 p.c. softwoods a 40 p.c. hardwoods.

Crown forests are administered and managed through the Department of La and Forests, which has 10 Branches at Head Office and 21 forest districts (grouped wit

regions). The Branches may be classified as service (Accounts, Law, Operations, nnel, and Research) and operating (Fish and Wildlife, Forest Protection, Lands Surveys, Parks and Timber). The list of operating Branches indicates that a multi-oncept of forests is practised but only the programs that foster the growth and use mber as a crop are discussed here.

Management.—The original function of the Timber Branch was to arrange for the rly sale of timber and this important function is still carried out along traditional —operators are granted a licence to cut specified timber for which they pay stumpage ntractual rates on the measurement (scale) of products removed. However, the ils and techniques of utilization are undergoing constant improvement. Although ario's forest-based industries have long been a Canadian leader in terms of diversity roducts and value of shipments, there is still a surplus of timber over actual cutting ie province. To ensure the continuing supply of timber of the type required by indus- an effective management policy has been conceived. Continuing forest inventories, g aerial photographic methods in which the province pioneered, provide an up-to-date rd of the forest wealth, showing the species and other characteristics of stands and geographical distribution. Inventory data are then applied to management planning; province has been divided into 205 management units, each homogeneous with respect orest and use patterns. Long-term plans set out regulations on the volume and location uttings and include programs for regeneration and tending that will sustain yields. f 1969, 197 plans (79 Crown Units, 57 Company Units and 61 Agreement Forests) were er completed or in process of completion for approximately 197,000 sq. miles.

The Timber Branch is also responsible for the regeneration, tending and improvement ie forests on Crown lands. It operates 10 forest tree nurseries (with supporting tree collection, treatment and storage plant) currently geared for an annual output of ut 100,000,000 units.

While the Department, directly or indirectly, supervises all planting projects on wn lands, regeneration agreements have been signed with all major licensees whereby assume the direct responsibility for the conduct of planting projects, receiving pay- t at an agreed rate for work completed. Similarly, other projects, such as site prepara- for the planting, may be performed by the companies under the same agreement.

During 1969, 47,650,000 nursery-produced trees were planted on about 66,100 acres Crown lands. The tubed seedling program continued in 1969 and a total of 12,350,000 ed seedlings were planted on about 13,000 acres. Other silvicultural treatments in- ed the direct seeding of 11,150 acres, treatment for natural regeneration on 43,300 acres stand improvement (cleaning, spraying, thinning, pruning, etc.) on 63,000 acres. ll, 196,600 acres of Crown land were silviculturally treated in 1969 to promote regenera- or to improve the forests.

For half a century, Ontario has had enabling legislation that permits municipalities conservation authorities to place abandoned and submarginal agricultural lands, to ch they have acquired title, under agreement with the Department of Lands and sts, which undertakes to plant and manage the properties for a specified period of e—usually 50 years. Nearly 230,000 acres currently under such agreements have n managed intensively, the plantations receiving regular thinnings. The trees removed in demand for pulpwood, posts, poles and sawlogs, making the undertakings financially active. In addition, the properties that are close to centres of population are acquiring nendous value as recreational areas.

Owners of private land may purchase planting stock for forestry purposes from ernment nurseries at nominal prices and may also receive free professional advice any forestry matter, including silviculture, harvesting and marketing. Under the odlands Improvement Act, 1966, it is possible to have planting and improvement k carried out completely under government direction and mainly at its expense. In

return, the owner is required to meet a few modest demands that ensure his good fai This program has, in three years, planted nearly 10,000 acres of idle land, and upda forest management on 16,000 acres of privately owned land.

In Ontario, the utilization of timber crops, the processing of forest products and t distribution of commodities of wood to markets are functions of private enterprise. P mary mills licensed in 1969 and supplied principally from provincial forests include pulp and paper mills, 30 veneer and plywood mills and 815 sawmills of all types. Althou the consumption trend for wood is upward, the costs of wood at the mills have also b increasing and this has led to increased mechanization and, in turn, to entirely new te nologies of logging and product transfers. These changes have put pressure on the tra tional methods of wood measurement, and the Department has adopted or is furth testing alternative practices including (1) tree-length scaling, (2) weight scaling, (3) sam scaling, (4) measurement of log diameters to the full inch, and (5) log grading. In additi the data and the invoicing of licensees are being computerized.

Certain parts of the Crown forests remain under-developed. For such areas, t Economics Unit has undertaken feasibility studies and has had a principal role in getti new firms to establish. Other functions of the Unit include co-operation in expandi the available statistical information for the forestry sector, development of econor guides for timber management, analysis of current manufacturing costs and market pric evaluation of the impact of policy decision and economic service to other Branches.

Protection.—The area under organized forest protection in Ontario totals 180,2 sq. miles and includes the main central band of accessible forests. This area is organiz into 20 fire districts and further subdivided into 54 chief ranger divisions for the purp of forest protection. South of this area, in the highly developed agricultural counties southern Ontario, the municipalities are responsible for fire control. The vast inaccessil areas to the north of the fire districts, totalling over 134,000 sq. miles, do not support sign cant stands of merchantable timber and, except for communities or other special valu are not protected. Within the fire districts, agreements were in effect in 1969 with 2 municipalities for the prevention and control of forest fires. An agreement was also effect with the Federal Government for the protection by the Ontario Department of Lan and Forests of 958,000 acres of Indian lands in the province. The average annual numb of fires for the 1960-69 period was 1,422 and the average annual burn was 142,759 acres.

Forest fire detection is accomplished through a combined aerial patrol and looko tower system as well as through reports from the public. Based on the results of continui study and analysis programs, selected towers in some areas are being phased out in favo of aircraft. Work with long-term fire retardant chemicals indicates that they can useful in fire control operations in Ontario; operational adoption, phased over the next t to three years, is planned. Prescribed burning as a silvicultural and hazard reduction t was continued in 1969 with 19 burns covering 5,933 acres.

The integral float tank water-bombing system installed on Department aircraft w employed in the control of fires. The aircraft fleet as of Jan. 1, 1970, comprised 26 Tur Beavers, 10 Otters, three Twin Otters and one Beechcraft Duke; five Bell G-4 helicopt were leased during the fire season. The communications system included 186 grou stations, 277 lookout tower radios, 20 patrol vessel radiotelephones, 674 mobile radiote phones, 1,344 portable fireline radios, 41 aircraft radio installations and 74 portable aircr radiotelephones.

Forest pest control in 1969 was again highlighted by the spruce budworm spraying northwestern Ontario, where 25,000 acres were treated. Small acreages on Crown-own and Crown-managed areas were also treated in 1969 for White Pine weevil, European Pi sawfly, Jack Pine budworm, White Pine blister rust and fomes root rot.

Manitoba.—The administration of Manitoba forests is controlled by the Resour Planning Branch of the Department of Mines and Natural Resources. The province divided into four regions, each under a Regional Director who is responsible for the fie

ministration of forests in his region. The Regional Director works under policy guide-
es established by the Resources Planning Branch, relating to timber disposal, reforesta-
n and fire protection.

The Resources Planning Branch co-ordinates control measures for the propagation,
provement and management of the forests, the harvest of forest products, and forest
ventory surveys. A nursery station is maintained to supply stock for reforestation of
uded Crown land and some natural seed areas have been established for nursery stock.
edlings are supplied to farmers for shelterbelts and woodlots and to commercial Christmas
e producers and an average of more than 4,000,000 are planted each year in reforestation
jects on Crown lands. The program of forest stand improvement comprises thinning,
aring and chemical spraying to remove undesirable species and encourage growth of
eferred trees. Forest inventories cover about 5,500 sq. miles annually and, on the basis
these inventories, working plans with annual allowable cuts on a management unit basis
e in operation.

Timber-cutting rights are awarded by Forest Management Licences, Timber Sales
d, in certain cases (particularly for salvage operations), by Timber Permits. Forest
anagement Licences may be granted for periods of up to 20 years and are renewable;
mber Sales may be for varying periods from one year upward and Timber Permits for
riods of up to one year. At present, one long-term Pulpwood Berth with an area of
745 sq. miles and 10 long-term Timber Berths, all granted prior to 1930, are in force.
second Pulpwood Berth agreement was signed in 1966, covering the construction of a
lp mill and sawmill at The Pas in northern Manitoba.

The area of the province under forest fire protection is 128,370 sq. miles with zones of
iority established in the less accessible areas. Fires are detected through a comprehensive
twork of lookout towers and supporting air and ground patrols, all in communication by
dio and Departmental or public telephones. Two Canso water-bombers and two heli-
pters are rented for the worst of the fire season to supplement the 10 aircraft of the
anitoba Government Air Service.

Manitoba co-operates with several federal services which maintain two research areas
the province, and works closely with federal authorities in investigating and controlling
rest damage resulting from insects and diseases. Public education in the fields of fire
evention and forest conservation is carried out and use is made of radio, television,
ewspapers, pamphlets, signs, film tours and talks.

Saskatchewan.—The forests of Saskatchewan are located in the northern half of the
rovince and cover 117,738 sq. miles, or 53 p.c. of the total land area. Provincial forests
nstitute approximately 92 p.c. of all forest land in the province and are managed and
eveloped by the Forestry Branch of the Department of Natural Resources.

The Forestry Branch, consisting of four divisions—Fire Control, Forest Management,
ventory and Silviculture—is responsible for developing and evaluating forest policies
d management programs. The responsibility for carrying out such policies and programs
borne by the various regional administrative authorities. For purposes of resource
dministration, the province, with the exception of the most northern portion, is divided
to three regions, each under the supervision of a regional superintendent. The regions
re subdivided into conservation officer districts which vary in size according to resource
ase and population to be served. In the most northerly part of the province, because of
arious special programs with northern residents, resource administration is the respon-
bility of the Northern Affairs Branch of the same Department. Close liaison is main-
ained between the Forestry Branch and the various regional authorities.

A major responsibility of the Forestry Branch is the development of techniques in the
revention, detection and suppression of forest fires. A network of 75 lookout towers
quipped with two-way radios is maintained throughout the province and is supplemented
y three aircraft on regular patrol duty during the high-hazard periods. Northern Saskat-
hewan's communication system, with more than 1,300 two-way radio sets in operation in

towers, vehicles, aircraft and forest camps, plays a vital role in the detection and suppressio of forest fires. These activities are assisted by the use of two helicopters and seven aircra equipped for water-dropping.

Alberta.—The 157,595 sq. miles of provincial forests in Alberta are administered b the Alberta Forest Service of the Department of Lands and Forests with Head Office Edmonton. The Service, headed by the Director of Forestry, is composed of six Branches— Administration, Timber Management, Forest Protection, Construction and Maintenanc Land Use and Training. The forest area is divided into 11 Forests, each responsible fo the forest within its boundaries and under the jurisdiction of a superintendent supporte by a number of specialists in areas of timber management, fire, land use, constructio communications, clerical and a complement of casual employees. These Forests are furth subdivided into Ranger Districts, each supervised by a district forest officer responsible t the superintendent. A district forest officer may have several assistant rangers and othe staff under his charge.

The Administration Branch supervises all Branches in maintaining general contr over revenue and expenditure, equipment inventory and personnel. The general admini strative policies of the Service are formulated by this Branch.

The function of the Timber Management Branch includes implementation and super vision of the timber quota system, acceptance and approval of management and annua operating plans prepared for leased and licensed Crown lands, preparation and execution o forest management plans, and disposal of Crown timber. The Branch also carries o silvicultural programs, processes applications, takes inventories of forest resources, inspect cutting areas to ensure proper logging and utilization practices and collects dues and fees

The Forest Protection Branch is in charge of all phases of protection including pre vention, detection and suppression of wild fires. This Branch includes a number of spe cialists such as a meteorologist, a communications officer and a special Aircraft Dispatc Section to assist in the over-all protection program.

The Construction and Maintenance Branch constructs and maintains all road, airstri and building facilities within the area of the Service's jurisdiction.

The Forest Land Use Branch is responsible for the planning and supervision of the proper land-use practices in the forested area, including grazing, recreation and watershe management, particularly on the east slopes of the Rocky Mountains containing the tw Saskatchewan Rivers. The Forestry Training Branch provides facilities and instruction for the second year of a two-year forest technology course given by the Northern Alberta Institute of Technology. It also conducts in-service training programs for all the Branches in the Forest Service.

Basic research in all phases of the forestry program is generally carried out by the Canadian Forestry Service. A new federal research laboratory is being completed in Edmonton to increase the research service that is provided.

British Columbia.—Of the 366,255 sq. miles in British Columbia, somewhat over 200,000 sq. miles are inventoried as productive forest land.* This includes close to 100,000 sq. miles of mature timber containing over 261,312,000 M cu. ft. of conifers and about 7,322,000 M cu. ft. of broadleaf species.

For administrative purposes, the province is divided into five Forest Districts with regional headquarters at Vancouver, Prince Rupert, Prince George, Kamloops and Nelson. Further decentralization of authority is effected by subdivision into Ranger Districts, of which there are approximately 22 in each Forest District. Twelve directional, servicing or policy-forming Divisions constitute the Head Office of the Forest Service at Victoria.

Efforts continue to bring British Columbia's forest resources under sustained-yield management and the forest industries are making progress toward more complete utilization

* See footnote, p. 612.

their raw materials. The problem is urgent despite the fact that, with a present annual ıle of approximately 1,890,000 M cu. ft., the total inventory would appear sufficient to pport current needs in perpetuity. One of the more spectacular results of sustained-ld administration has been the swinging of a greater proportion of the annual forest rvest to the interior of the province. In 1969, the over-cut coast (wet belt) forests counted for about 52.6 p.c. of the total forest cut and the interior for 47.4 p.c. For all actical purposes, the entire interior forest is publicly owned; a large proportion of the ivately owned, leased or licensed forests are on the coast.

Several systems of timber disposal are in effect. The Tree Farm Licence is a contract tween the government and a company or individual whereby the latter agrees to manage, otect and harvest an area of forest land, including any privately held forest land, on a stained-yield basis. Tree Farm Licences are subject to re-examination for renewal every years. Public Sustained-Yield Units are areas within which the Forest Service manages e Crown timber on a sustained-yield basis. Within the Public Sustained-Yield Units, cognized established logging operators can apply for Timber Sale Licences or Timber le Harvesting Licences which entitle them to log at a given rate per year, based on a mber of factors including the operator's average rate of production at the time the unit is established.

Forest fire prevention techniques and organization for effective forest fire suppression e vital aspects of planned sustained-yield management. A greatly expanded pulp in-stry, added to the long-established logging and sawmill industries, has increased the cessity for more adequate fire control. Extensive use is made of aircraft under various rms of contract. Air tankers and fire-spotter aircraft are employed during the fire season d helicopters and other aircraft are employed under contract for patrol duties and for e transport of fire suppression crews. The rugged topography and the many remote and arsely populated areas of the province demand the availability of a variety of transporta-on methods to tie in with early discovery of and attack on forest fires.

Close liaison with the Forestry Branch of the federal Department of Fisheries and restry through facilities at Victoria provides detailed information on insect and fungal emies of the forest and on fire research.

Subsection 3.—The Pulp and Paper Research Institute of Canada

The Pulp and Paper Research Institute of Canada is a centre of research and learning ncerned with virtually every aspect of the production and use of pulp and paper products. was established in 1913 as a branch of the Dominion Forest Products Laboratories and 1927 was reorganized under the joint sponsorship of the Canadian Pulp and Paper ssociation, the Federal Government and McGill University. The Institute staff carries t fundamental research and some applied research in the fields of woodland operations d pulp and paper mill operations. In addition, in co-operation with McGill University, trains postgraduate students who are working toward master's and doctorate degrees in ysical chemistry, wood chemistry, or chemical and mechanical engineering, and whose eses subjects lie in fields of interest to the pulp and paper industry.

The Institute's head office and main laboratories are located in Pointe Claire on the estern outskirts of Montreal in a recently enlarged building constructed by the Govern-ent of Canada. Space provided by the University is also occupied on the campus of cGill University by Institute staff and students involved in the graduate education rogram. The Institute's facilities include: organic and physical chemistry, physics and gineering laboratories; pilot plants for chemical pulping, pulp and chip refining and aste liquor pyrolysis; a greenhouse and other facilities for woodlands research; an extensive brary; shops and special facilities for pulp and paper testing and for photographic and icroscopic (both light and electron) studies of wood, pulp and paper. It has a staff of out 200.

The Institute's research activities comprise a basic program in pulp and paper researc and in woodlands research, contract research, and technical services. The basic pulp a paper research program is supported by assessments from the Maintaining Membersh (some 40 companies, representing more than 100 mills and about 95 p.c. of the total pr duction of the Canadian industry). The woodlands research program is supported b assessments on all member companies of the Canadian Pulp and Paper Association east the Rockies that use pulpwood. Both programs comprise research of interest to the i dustry broadly, as distinct from that which is the concern of a single company only.

The projects in the research program range from studies of the growing seedling in t forest to the converted pulp and paper product, and are directed at seven broad researc goals: reduction of wood cost, reduction of fibre cost, reduction in capital and operati costs, testing and process control, products research, reduction of environmental pollutio and basic knowledge. The Institute is regarded as a centre for broad, long-range a uninterrupted studies of basic principles and for major engineering research and develo ment projects which individual pulp and paper companies would find difficult to justify the costs were not shared. Moreove., the Institute is a centre of highly specialized equi ment and manpower which individual companies would not normally have.

In addition to its permanent staff, the Institute, in co-operation with McGill Universit has some 45 graduate students working on fundamental projects in the background of pu and paper technology, which also serve as their theses topics. The E. B. Eddy Profess of Industrial and Cellulose Chemistry at McGill, who is also a staff member of the Institut directs graduate student work on such subjects as the behaviour of the materials of whi wood is made—cellulose, lignin and hemicelluloses. The Director of the Institute's A plied Chemistry Division, also a Professor in the McGill Chemistry Department, supervis graduate student work in polymer, surface and colloid chemistry with particular reference those aspects that pertain to the physics and chemistry of pulp and paper. An Associa Professor of Chemical Engineering at McGill, who is a consultant to the Institute, direc graduate students in a variety of chemical studies. In addition, the Director of t Institute's Applied Physics Division, who holds a teaching appointment in McGill's Depar ment of Mechanical Engineering, supervises graduate student investigations on su subjects as supercalendering of paper and frictional processes in polymeric systems. Oth staff members who hold concurrent honorary positions at McGill as Research Associat assist in this student program.

The Institute undertakes contract research projects on a cost-reimbursement basis f individual companies or groups of companies in the pulp and paper or allied fields. T larger of these co-operative contracts have been concerned with problems of particul segments of the Canadian pulp and paper industry. The Institute also provides a bro range of technical information services to the industry and, to some extent, to other i dustries and the public. It maintains a specialized library for this purpose which stoc bibliographies, abstracts, translations and critical reviews for the use of the scientific st and the industry.

CHAPTER XIII.—FISHERIES AND FURS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

PART I.—FISHERIES*

Fishing is Canada's oldest primary industry but even though commercial fishing is now mited importance to the national economy as a whole, it is still of paramount conse- nce to the coastal provinces and to inland areas adjacent to waters where commercial ing is pursued.

Canada's main fishing effort is centred in the northwest Atlantic and the northwest ific waters, within range of home ports. The northwest Atlantic fishing grounds are richest in the world. The offshore banks cover about 200,000 sq. miles and are ex- ted by the fishing fleets of more than a dozen nations. The harvest of cod and allied ies alone, which includes haddock, cusk, pollock, hake, etc., is immense and other im- tant species yielded by this vast fishing area include halibut and other flatfishes (in- ling turbot), and herring, mackerel, salmon, swordfish and tuna. Crustacea include sters and crabs, and scallops comprise the bulk of molluscs landings. Oysters and clams harvested in inshore waters.

Salmon, halibut and herring are the principal species harvested in the Pacific Coast eries, although a variety of other fish and shellfish are also taken. The catches of the Pacific salmon—sockeye, chinook, coho, chum and pink—are regulated for conservation poses, and extensive biological and engineering facilities are maintained to safeguard develop these important stocks. Halibut, which are fished in the Gulf of Alaska and Bering Sea, are also closely protected by regulations to maintain stocks at optimum els. Herring are plentiful and are landed in quantity for reduction into fish meal and oil.

Adding to the total production is a fairly large inland fishery based on the country's nsive bodies of fresh water. The Great Lakes, which have an area of about 61,000 sq. es, yield a number of species, including whitefish, lake trout, pickerel, sauger, northern e, yellow perch, white bass, sturgeon, smelt, carp and various species of chub. The 300

* Section 1 and part of Subsection 1 of Section 3 were prepared by the Information and Consumer Service of the eries Branch, Department of Fisheries and Forestry, Ottawa.

fishing lakes lying in an area of about 35,000 sq. miles in the Prairie Provinces yield harvests of whitefish, lake trout, pickerel, pike and other species and the 10,000-sq. Great Slave Lake as well as smaller lakes in the Northwest Territories also produce qua ties of lake trout and whitefish.

Altogether, more than 150 species of fish and shellfish are harvested by Cana fishermen.

Section 1.—Commercial Fishing and Marketing

Canada's commercial fisheries produce a bountiful variety of fish and shellfish for h and world markets. Harvesting ocean and inland waters unusually rich in aquatic the nation's fishing industry ranks among the world's major producers of consumer fis products. Canada, in terms of quantity, is among the dozen or so countries that har more than 1,000,000 metric tons (2,204,600,000 lb.) of fish annually and, in terms of va consistently places among the world's top three fish-exporting countries.

Output of Canada's commercial fisheries increased substantially during the 19 This was a period of transition for the industry, highlighted by the introduction of the s trawler and the development of new or expanded fisheries for certain species, not herring, and also by the introduction of new harvesting techniques and improvement processing capability which resulted from intensified modernization programs initiated industry in collaboration with federal and provincial government agencies. A decade the fish catch fluctuated around 2,200,000,000 lb., producing gross earnings for the fisher of about $110,000,000. However, beginning in 1962, catches rose in both quantity value, reaching peak levels in 1968 of 2,929,223,000 lb. valued at $181,379,000. marketed value of all Canadian fish production soared from $199,300,000 in 196 $388,213,000 in 1968. Marginal declines from those records occurred in 1969.

Although the output of Canada's fishing industry is on a generally upward trend, t has been a definite decline in the number of fishermen. In 1969, some 68,000 fisherm compared with 80,000 a decade ago—manned a fleet of over 5,000 vessels of more t 10 gross tons and 36,000 smaller craft, and fish processing plants across the country emplo more than 18,000 workers. Investment in fishing craft and gear exceeded $300,000,00

The dawning 1970s could herald new and expanded horizons for the Canadian fish provided that the emerging problems of resource supply and quality are successfully o come. The steadily mounting pressures on fish stocks from domestic and internati exploitation and the increasingly serious effects of pollution on coastal and inland wa are major hazards threatening the continued growth of the industry.

Commercial Landings.—In 1969 the commercial fisheries catch of 2,715,000,00 had a landed value of $181,200,000. Nova Scotia was the top money-earning fish province with a catch value of $56,000,000. British Columbia was second with a v of $47,347,000 and Newfoundland third with $30,735,000, followed by the other co provinces of New Brunswick with $16,000,000 and Quebec and Prince Edward Island $9,000,000 each. Total landings for the year were down by 214,000,000 lb. and the v of landings by $4,700,000 from the records set in 1968. The total "marketed" value of year's output was estimated at $375,000,000, an amount $10,600,000 lower than that of previous season.

Atlantic Coast fishermen landed 2,426,000,000 lb. of fish and shellfish in 1969 although this was about 100,000,000 lb. less than in 1968, it brought in a gross revenu $121,000,000, a 4-p.c. gain. Each of the five East Coast provinces shared in the value g even though the quantity of landings increased only in Newfoundland and Prince Edw Island. Newfoundland, which leads the provinces in quantity of fish landings, boo its production above the 1,000,000,000-lb. mark for the first time in 1969 and Pr

vard Island's output increased by 2,000,000 lb. to 49,000,000 lb. On the other hand, a Scotia's landings of 671,000,000 lb. showed a sharp drop from the previous year and e of New Brunswick and Quebec were also down.

British Columbia, although slipping behind all other sea coast provinces except Prince vard Island in catch volume, recorded landings of 175,000,000 lb. in 1969. The landed e of this catch, at $47,500,000, accounted for more than 25 p.c. of the Canadian total. province's total catch was down by 92,000,000 lb. from 1968 and was little more than the quantity taken in 1967. The salmon catch of 79,000,000 lb. was down almost ,000,000 lb. from the previous season and was British Columbia's lowest since 1960. hough prices to fishermen averaged 35 cents a pound, 10 cents higher than the year re, the total value of Pacific salmon landings at $27,800,000 was $17,100,000 less than 968. Nearly half of the salmon catch was landed by gillnetters, 32 p.c. by trawlers 19 p.c. by seiners.

West Coast halibut landings by Canadian fishermen reached a six-year high in 1969. s catch of 33,800,000 lb., combined with record halibut prices averaging 42.6 cents a nd, gave a return of $14,400,000 to the fishermen. The continued ban on Pacific Coast ring fishing for reduction purposes, a necessary conservation measure, resulted in a catch nly 4,000,000 lb. worth $221,000; this may be compared with an average catch during years 1960 to 1968 of 337,000,000 lb. Landings of most other Pacific Coast fish were ut average in 1969.

Canada's freshwater fishing industry recorded a total catch in 1969 of about 121,000,000 which had a landed value of $14,000,000 and a marketed value of about $20,000,000. s quantity was about 6,000,000 lb. greater than in 1968 and returned to the fishermen additional $1,100,000.

Marketing.—The total marketed value of Canadian fishery products in 1969 is mated to have reached $375,000,000. As in other years, exports constituted almost ee quarters of the total production, accounting for a record $279,000,000, an increase of ,000,000 over the previous season. Two thirds of all fisheries products shipped by nada were sold in the United States, another 22 p.c. went to Europe and 7 p.c. to the ribbean. Imports of fishery products into Canada in 1969 were valued at $42,300,000, main species imported being shrimp and tuna.

As a consequence of reduced groundfish landings on the Atlantic Coast, the production groundfish fillets and blocks was about 2 p.c. lower in 1969 than in 1968. Weak prices ring the first nine months of the year were reflected in a lower production of cod blocks d of hake, cusk and pollock fillets and blocks, but a strong rising market for flatfish oducts induced a 20-p.c. increase (to 63,000,000 lb.) in the production of flounder fillets d blocks.

Fish meal production continued its upward trend. Output of East Coast herring meal e to 92,000 tons from 87,000 tons the year before and output of groundfish meal was tually unchanged at 47,000 tons. Of the total fish meal produced, 80,000 tons were orted, about 77 p.c. of it to the United States.

In 1969 only 622,000 cases of salmon were packed, 1,100,000 fewer than in 1968. most all salmon species except sockeye experienced the lowest production levels in five ars and this lower volume was accompanied by higher export prices for sockeye and pinks. e prices for other salmon species remained close to 1968 levels.

About 80 p.c. of the 1969 lobster catch was exported. Of exports valued at $37,000,000, p.c. went to the United States and 8 p.c. to Europe. More than half of the lobster orts were shipped in the shell, 40 p.c. as meat and 6 p.c. canned. About 95 p.c. of the llop exports, totalling 13,000,000 lb. valued at $14,000,000, also went to the United States. cause of reduced market prices, the returns were $1,000,000 below those of the previous ar.

Close to 260,000,000 lb. of Atlantic groundfish were put to salt in 1969, about 2 p more than in the previous year; 72,500,000 lb. of salted and dried groundfish were exporte nearly two thirds of it to the United States, Jamaica and Puerto Rico.

Section 2.—Fishery Statistics

The review of commercial fishing and marketing given in the preceding Section cov the situation in 1969 and contains estimated figures for that year. At the time of t preparation of this Chapter, however, the latest statistics available in detail for both t primary production and fish products were those for 1968 contained in the followi Subsections.

Subsection 1.—Primary Production

Canadian fishing waters yielded a record harvest of fish and shellfish in 1968. Landi of all species, both inland and sea (including such non-fish items as whales, seaweed, sea bait worms, etc.), totalled more than 2,900,000,000 lb., representing a landed value $181,400,000.

The value of the catch on the Atlantic Coast amounted to $115,700,000, an incre of 11.7 p.c. over the 1967 value of $103,600,000. The lobster catch was the most valua at $24,500,000 followed closely by cod at $24,300,000. Scallops moved to third place $13,400,000, reflecting a substantial increase in the price of that species. Two highlig of the Atlantic Coast fishery in 1968 involved the sensational growth of the queen cr fishery which paralleled a spectacular increase in the off-shore herring fishery.

The value of the Newfoundland catch was down slightly from the 1967 high $29,000,000 to $28,800,000. Herring and lobster were the only species to show increas landings. Cod landings valued at $13,600,000 represented 47.3 p.c. of the total.

Nova Scotia catch reached a new high in 1968 at $54,600,000. Scallops, valued $11,800,000 were, for the first time, the most important species from the standpoint income to the fishermen. Lobsters at $10,900,000 were second, followed by cod, haddo swordfish, herring, flounders, and sole.

New Brunswick fishermen enjoyed a record catch valued at $15,600,000, 43 p.c. hig than the 1967 value of $10,900,000. Herring, increasing steadily from a low of $900,000 1961, made a spectacular gain from $3,100,000 in 1967 to $4,900,000 in 1968 to become t major source of income to the fishermen. Lobster was next at $4,000,000 and the tu fishery made its first substantial contribution in the province with a landed value $900,000.

Returns to Prince Edward Island fishermen were also at a record high. Lobster $5,300,000 made up 62 p.c. of the total landed value of $8,600,000. The Irish moss fishe was second at $1,200,000 followed by scallops, oysters, cod and redfish.

Quebec landings increased in value to $8,600,000 from $7,900,000 in 1967. The ma species were cod $2,100,000, redfish $1,900,000, and lobster $1,700,000. The inland fishe in Quebec contributed $500,000 to the total landed value.

The landings of fish from the inland waters of Ontario, the Prairie Provinces, Yuk Territory and the Northwest Territories added to a surprising total of $12,300,000, increase of 9.5 p.c. over the $11,200,000 of 1967.

British Columbia landings, at $57,300,000 in 1968, were down slightly from the a time high of $60,700,000 reached in 1966. The main cause of the decrease was the d appearance of herring from British Columbia waters; the value of herring landings, whi was $5,100,000 in 1966, was only $200,000 in 1968. Salmon landings valued at $44,900,0 were up from the previous high of $38,700,000 reached in 1966, and the catch of tuna $500,000 was also a record, being more than double the previous high of $200,000 reach in 1967.

1.—Quantity and Value of Sea and Inland Fish Landed, by Province, 1964-68

Province or Territory	1964	1965	1966	1967	1968
	Quantity				
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
ewfoundland	583,381	616,661	679,787	791,375	961,350
ince Edward Island	41,015	46,241	58,171	44,526	46,995
ova Scotia	514,703	592,350	706,344	693,406	795,421
ew Brunswick	254,027	296,441	350,129	358,411	545,104
uebec	133,733	145,176	146,609	192,134	204,522
ntario	43,508	52,486	56,344	54,656	55,707
anitoba	28,636	29,588	29,933	20,841	25,734
askatchewan	14,306	14,933	14,027	11,725	10,972
lberta	12,751	8,514	10,907	9,914	11,883
ritish Columbia[1]	712,613	626,161	574,920	332,783	267,239
ukon and Northwest Territories	6,052	5,670	4,362	4,344	4,296
Totals	**2,344,725**	**2,434,221**	**2,631,533**	**2,514,115**	**2,929,223**
a fish	2,234,553	2,314,775	2,509,923	2,407,459	2,814,071
land fish	110,172	119,446	121,610	106,656	115,152
	Value				
	$'000	$'000	$'000	$'000	$'000
ewfoundland	21,978	23,176	25,886	28,116	28,007
ince Edward Island	5,642	6,825	5,998	6,967	7,399
ova Scotia	40,977	48,194	46,738	45,401	52,250
ew Brunswick	10,277	10,651	11,136	10,877	15,581
uebec	5,894	6,938	7,278	7,743	8,544
ntario	5,222	6,402	5,995	5,988	5,968
anitoba	3,720	4,370	4,788	2,527	3,276
askatchewan	1,490	1,734	1,706[r]	1,163	1,382
lberta	799	677	844	758	917
ritish Columbia[1]	48,296	47,435	60,659	48,971	57,274
ukon and Northwest Territories	833	994	792	842	781
Totals	**145,128**	**157,396**	**171,820[r]**	**159,353**	**181,379**
ea fish	132,413	142,424	156,966	147,522	168,422
land fish	12,715	14,972	14,854[r]	11,831	12,957

[1] Includes halibut landed in United States ports.

2.—Quantity and Value of the Chief Commercial Fish Landed, 1967 and 1968

Note.—Excludes quantities and values of non-fish items such as whales, seaweed, seals, bait worms, etc.

Area and Species	Quantity Landed		Value Landed	
	1967	1968	1967	1968
	'000 lb.	'000 lb.	$'000	$'000
Atlantic Coast				
roundfish	**1,161,556**	**1,235,275**	**49,084**	**49,354**
Catfish	4,635	6,971	150	235
Cod	520,891	593,543	23,679	24,348
Flounder and sole	236,664	235,077	8,440	8,061
Haddock	102,750	91,113	6,803	6,852
Hake	14,052	11,545	483	360
Halibut	4,279	3,992	1,665	1,560
Pollock	32,744	33,520	1,294	1,144
Redfish	189,295	214,822	4,969	5,548
Other	56,246	44,692	1,601	1,246
elagic and Estuarial	**820,958**	**1,218,226**	**16,352**	**20,972**
Alewives	6,562	7,081	108	132
Herring	761,139	1,155,165	8,189	11,986
Mackerel	24,653	24,533	943	998
Salmon	6,290	4,634	3,087	2,330
Smelts	3,674	3,770	324	373
Swordfish	8,007	7,337	3,292	3,729
Other	10,633	15,706	409	1,424

2.—Quantity and Value of the Chief Commercial Fish Landed, 1967 and 1968—concluded

Area and Species	Quantity Landed		Value Landed	
	1967	1968	1967	1968
	'000 lb.	'000 lb.	$'000	$'000
Atlantic Coast—concluded				
Molluscs and Crustaceans	**74,528**	**76,513**	**32,623**	**40,257**
Clams	4,803	5,519	308	382
Lobsters	34,924	37,310	23,256	24,450
Oysters	2,809	3,084	650	602
Scallops	13,321	15,648	7,760	13,407
Other	18,671	14,952	649	1,416
Other[1]	**17,511**	**16,818**	**492**	**565**
Totals, Atlantic Coast	**2,074,553**	**2,546,832**	**98,551**	**111,148**
Pacific Coast				
Groundfish	**53,366**	**59,143**	**8,667**	**9,631**
Cod (gray)	11,179	11,353	776	778
Halibut[2]	26,221	29,390	6,631	7,348
Ling cod	4,984	6,317	462	629
Sablefish	891	889	171	204
Flounder and sole	9,290	10,190	594	629
Other	801	1,004	33	43
Pelagic and Estuarial	**259,791**	**193,269**	**38,250**	**45,859**
Herring	116,741	6,373	1,828	231
Salmon	133,175	176,354	36,001	44,889
Chum	*12,135*	*36,496*	*1,611*	*4,951*
Coho	*20,399*	*29,994*	*7,125*	*10,449*
Pink	*49,785*	*54,826*	*6,640*	*6,996*
Sockeye	*36,814*	*41,206*	*13,872*	*15,632*
Spring	*13,789*	*13,611*	*6,681*	*6,795*
Other	*253*	*221*	*72*	*66*
Other	9,875	10,542	421	739
Molluscs and Crustaceans	**19,480**	**14,743**	**2,042**	**1,778**
Clams	2,759	1,499	163	98
Crabs	5,301	4,372	797	787
Oysters	9,626	7,236	733	562
Shrimps and prawns	1,696	1,568	332	320
Other	98	68	17	11
Other[1]	**146**	84	**12**	**6**
Totals, Pacific Coast	**332,783**	**267,239**	**48,971**	**57,274**
Inland				
Freshwater Fish	**102,441**	**109,622**	**11,575**	**12,640**
Bass	856	828	245	279
Catfish	1,304	1,543	215	220
Herring, lake (cisco)	2,042	2,985	91	178
Perch	23,412	25,625	2,455	2,161
Pickerel (yellow)	8,639	8,534	2,123	2,451
Pike	7,782	9,514	496	673
Saugers	2,834	4,053	441	678
Smelts	12,661	12,490	510	486
Sturgeon	243	213	166	183
Trout	2,941	2,390	530	481
Tullibee	9,084	9,913	477	497
Whitefish	18,527	18,300	3,279	3,757
Other	12,116	13,234	547	596
Other[3]	**4,215**	**5,530**	**256**	**317**
Totals, Inland	**106,656**	**115,152**	**11,831**	**12,957**
Grand Totals	**2,513,992**	**2,929,223**	**159,353**	**181,379**

[1] Includes livers and scales. [2] Includes landings by Canadian fishermen in United States ports. [3] Sea fish caught inland.

3.—Persons Employed in the Primary Fishing Industry, by Province, 1966-68

Province or Territory	Sea Fisheries			Inland Fisheries		
	1966	1967	1968	1966	1967	1968
	No.	No.	No.	No.	No.	No.
foundland	20,286	19,814	19,355	—	—	—
ce Edward Island	3,220	3,369	3,301	—	—	—
a Scotia	13,067	12,589	13,108	—	—	—
Brunswick	5,642	5,518	5,766	180	147	176
ec	3,703	3,920	4,179	728	674	766
rio	—	—	—	2,445	2,197	2,044
toba	—	—	—	5,320	4,019	4,018
atchewan	—	—	—	1,800	1,724	2,348
rta[1]	—	—	—	4,360	4,750	4,758
sh Columbia	12,000	12,117	12,133	—	—	—
n Territory	—	—	—	45	51	49
hwest Territories	—	—	—	450	361	352
Totals	**57,918**	**57,327**	**57,842**	**15,328**	**13,923**	**14,511**

Licences issued.

Subsection 2.—Fish Products

According to commodity surveys conducted by the Dominion Bureau of Statistics, value of sea and inland fish products produced at all industrial levels, including the ue to fishermen, amounted to $388,213,000 in 1968; this was an increase of 17.7 p.c. r 1967 and the highest amount on record. Much of the increase over 1967 took place he salmon fishery of British Columbia and the herring fishery of New Brunswick.

4.—Value of All Products of the Fisheries, by Province, 1964-68

Province or Territory	1964	1965[r]	1966[r]	1967	1968
	$'000	$'000	$'000	$'000	$'000
foundland	44,935	51,340	60,051	54,867	62,682
ce Edward Island	8,418	9,641	9,164	13,067	11,416
a Scotia	88,613	94,291	97,111	96,705	103,629
Brunswick	32,249	46,255	45,268	45,307	65,145
ec	11,618	12,881	13,328	13,741	15,965
rio	5,875	7,202	6,744	6,738	6,717
toba	6,855	7,331	7,082	4,011	7,255
atchewan	3,082	3,222	3,413	2,317	2,769
rta	1,222	1,128	1,383	1,398	1,462
sh Columbia and Yukon Territory[1]	97,977	89,898	123,715	104,490	123,983
hwest Territories	1,215	1,411	1,225	1,259	893
Totals[2]	**291,536**	**310,178**	**357,694**	**329,963**	**388,213**
ucts from the sea	272,602	288,963	335,639	313,641	368,454
ucts taken inland	18,934	21,215	22,055	16,322	19,759

Includes landings by Canadian fishermen in United States ports. [2] Totals are lower than the sum of incial totals because duplications resulting from intershipments between provinces are removed.

5.—Marketed Value of All Products of the Fisheries,[1] by Area and Species, 1964-68

Area and Species	1964	1965[r]	1966[r]	1967	1968
	$'000	$'000	$'000	$'000	$'000
Atlantic Coast					
Groundfish	**93,702**	**105,354**	**113,023**	**101,463**	**112,88**
Catfish	318	329	605	456	80
Cod	46,084	50,038	49,310	44,226	50,40
Flounder and sole	12,104	17,100	18,257	17,288	18,17
Haddock	15,432	11,040	12,007	11,189	11,59
Hake	1,115	904	978	703	63
Halibut	1,836	1,907	1,613	2,059	1,82
Pollock	4,849	4,534	3,177	2,643	2,71
Redfish	4,869	8,309	11,694	10,549	13,84
Other	7,095	11,193	15,382	12,350	12,89
Pelagic and Estuarial	**26,727**	**27,939**	**41,555**	**46,918**	**57,63**
Alewives	269	285	186	207	25
Herring	5,136	6,935	16,623	20,820	27,17
Mackerel	1,618	1,861	2,098	2,553	2,23
Salmon	3,608	2,676	4,412	5,901	5,09
Sardines	7,415	11,553	12,458	8,817	14,39
Smelts	387	541	572	599	76
Swordfish	3,700	3,203	4,147	4,548	5,13
Other	4,594	885	1,059	3,473	2,58
Molluscs and Crustaceans	**51,239**	**56,843**	**47,064**	**48,177**	**62,83**
Clams	166	251	511	358	43
Lobsters	36,279	43,665	32,600	30,782	35,74
Oysters	594	827	919	980	1,22
Scallops	12,564	10,909	11,604	13,983	19,88
Other	1,636	1,191	1,430	2,074	5,54
Other	**6,110**	**8,955**	**10,316**	**12,629**	**11,14**
Totals, Atlantic Coast	**177,778**	**199,091**	**211,958**	**209,187**	**244,50**
Pacific Coast					
Groundfish	**12,947**	**16,264**	**17,851**	**13,354**	**15,04**
Cod (gray)	1,187	1,853	1,837	1,590	1,90
Halibut[2]	10,103	12,607	13,536	9,144	10,16
Ling cod	569	724	798	801	99
Sablefish	273	321	451	591	34
Flounder and sole	662	676	1,126	1,091	1,39
Other	153	83	103	137	23
Pelagic and Estuarial	**75,259**	**64,415**	**98,713**	**86,166**	**104,63**
Herring	11,562	11,750	8,305	2,640	33
Salmon	63,045	52,073	86,572	79,769	99,97
Chum	*7,197*	*2,288*	*5,274*	*4,528*	*13,36*
Coho	*16,377*	*19,793*	*20,847*	*12,691*	*19,69*
Pink	*12,553*	*9,047*	*28,143*	*21,685*	*22,04*
Sockeye	*18,231*	*12,873*	*21,119*	*28,264*	*30,64*
Spring	*7,662*	*6,938*	*9,133*	*10,093*	*10,51*
Other	*1,025*	*1,134*	*2,056*	*2,508*	*3,70*
Other	652	592	3,836	3,757	4,34
Molluscs and Crustaceans	**2,642**	**2,758**	**3,437**	**3,805**	**3,50**
Clams	190	295	383	420	23
Crabs	1,439	1,145	1,438	1,793	1,69
Oysters	650	706	964	803	78
Shrimps and prawns	312	595	641	748	73
Other	51	17	11	41	6
Other	**7,094**	**6,435**	**3,680**	**1,129**	**70**
Totals, Pacific Coast	**97,942**	**89,872**	**123,681**	**104,454**	**123,93**

For footnotes, see end of table.

5.—Marketed Value of All Products of the Fisheries,[1] by Area and Species, 1964-68—concluded

Area and Species	1964	1965[r]	1966[r]	1967	1968
	$'000	$'000	$'000	$'000	$'000
Inland					
eshwater Fish	**18,262**	**20,390**	**21,144**	**15,481**	**18,882**
Bass	349	499	12	310	338
Catfish	218	215	158	232	230
Herring, lake (cisco)	71	62	71	102	200
Perch	2,070	3,063	2,287	2,794	2,465
Pickerel (yellow)	4,353	4,577	5,272	3,222	4,048
Pike	1,042	1,025	1,051	1,094	1,799
Saugers	1,624	1,965	1,990	837	1,522
Sturgeon	242	242	213	181	204
Trout	850	910	865	802	705
Tullibee	1,066	846	780	677	699
Whitefish	5,624	5,876	5,563	4,474	5,723
Other	753	1,110	2,882	756	949
ther	**672**	**825**	**911**	**841**	**877**
Totals, Inland	**18,934**	**21,215**	**22,055**	**16,322**	**19,759**
Grand Totals	**294,654**	**310,178**	**357,694**	**329,963**	**388,213**

[1] Includes value of livers and liver products. [2] Includes landings by Canadian fishermen in United States rts.

The annual output of canned salmon fluctuates considerably with the extent of the tch, as is shown in Table 6. This product has traditionally been the most important the industry, but the demand for Atlantic Coast frozen groundfish fillets and blocks has sen very rapidly in recent years and the value of these Atlantic products was higher than iat of canned salmon every year from 1963 to 1966 and only slightly lower in 1967 and 1968.

6.—Pacific Coast Production of Canned Salmon, 1966-68

Species	1966		1967		1968	
	Quantity	Value	Quantity	Value	Quantity	Value
	cases[1]	$'000	cases[1]	$'000	cases[1]	$'000
hum	160,784	3,880	94,022	2,555	270,688	7,405
oho	281,623	11,545	146,677	6,017	187,594	7,730
nk	951,784	27,273	650,142	19,943	669,347	21,524
ckeye	409,200	20,941	558,892	28,155	611,011	30,532
ring	14,585	412	14,679	431	7,416	216
eelhead	2,480	75	1,296	40	933	29
Totals	**1,820,456**	**64,126**	**1,465,708**	**57,141**	**1,746,989**	**67,436**

[1] 48 lb.

7.—Atlantic Coast Production of Frozen Fillets and Fish Blocks, 1966-68

Area and Species	1966		1967		1968	
	Quantity	Value	Quantity	Value	Quantity	Value
	'000 lb.	$'000	'000 lb.	$'000	'000 lb.	$'000
Newfoundland	**116,584**	**30,923**	**100,440**	**24,871**	**126,341**	**30,693**
Cod	59,917	14,428	40,916	9,338	67,035	15,014
Haddock	1,187	395	1,249	382	763	241
Redfish	19,236	4,660	16,402	3,739	17,024	3,853
Flatfish	26,770	8,465	29,347	8,593	31,593	9,017
Other	9,474	2,975	12,526	2,819	9,926	2,568
Maritimes	**106,352**	**30,514**	**96,892**	**26,099**	**99,804**	**27,493**
Cod	32,745	8,378	29,298	7,271	34,172	7,956
Haddock	22,456	7,825	23,155	7,381	19,903	7,094
Redfish	14,990	3,834	13,688	2,978	16,307	4,531
Flatfish	23,342	7,671	20,348	6,141	16,649	5,734
Other	12,819	2,806	10,403	2,328	12,773	2,178
Quebec	**23,339**	**5,327**	**24,827**	**4,842**	**31,941**	**6,751**
Cod	9,051	2,088	6,140	1,302	8,823	1,880
Redfish	11,410	2,453	15,648	2,937	20,324	4,145
Flatfish	2,410	677	2,080	507	2,215	584
Other	468	109	959	96	579	142
Totals, Atlantic Coast	**246,275**	**66,764**	**222,159**	**55,812**	**258,086**	**64,937**
Cod	101,713	24,894	76,354	17,911	110,030	24,850
Haddock	23,643	8,220	24,404	7,763	20,666	7,335
Redfish	45,636	10,947	45,738	9,654	53,655	12,529
Flatfish	52,522	16,813	51,775	15,241	50,457	15,335
Other	22,761	5,890	23,888	5,243	23,278	4,888

Section 3.—Governments and the Fisheries

The Federal Government has full legislative jurisdiction over the coastal and inlan fisheries of Canada, and all laws for the protection, conservation and development of thes fisheries resources are enacted by the Parliament of Canada. The management of fisherie is, however, shared with provincial governments to which certain administrative responsi bilities have been delegated.

The federal Department of Fisheries and Forestry exercises responsibility for th management of all fisheries, both marine and freshwater, in four East Coast provinces— Nova Scotia, New Brunswick, Newfoundland and Prince Edward Island—and in th Yukon and Northwest Territories. In four inland provinces—Ontario, Manitoba Saskatchewan and Alberta—the management of all fisheries is conducted by the provincia governments. In Quebec, the provincial government manages both marine and freshwate fisheries, but the inspection of fish and fishery products produced for sale outside th province is carried out by the federal Department of Fisheries and Forestry, as it is in a other provinces. In British Columbia, the fisheries for marine and anadromous (i.e., fis that migrate to the sea from fresh water) species are managed by the Department of Fish eries and Forestry, but the provincial government manages its freshwater fisheries. In th national parks across the country, the fisheries are managed by the Canadian Wildlif Service, Department of Indian Affairs and Northern Development.

Licences for sport fishing in all provinces are distributed by the respective provincia government which retains all revenues so collected. Sport fishing licences in the Yuko and Northwest Territories are distributed by the federal Department of Fisheries an Forestry.

Federal-Provincial Relations.—The mutual interest of federal and provincial governments in fisheries problems is recognized in the undertaking of joint studies and programs, frequently on a regional basis. Regional committees established in recent years have brought together representatives of all governments concerned for periodic discussion. Four groups have evolved: the Federal-Provincial Atlantic Fisheries Committee consisting of representatives of the Federal Government and of the Governments of New Brunswick, Newfoundland, Nova Scotia, Prince Edward Island and Quebec; the Federal-Provincial Committee for Ontario Fisheries; the Federal-Provincial Prairie Fisheries Committee comprising representatives of the Federal Government and of the Governments of Alberta, Manitoba and Saskatchewan; and the Federal-Provincial British Columbia Fisheries Committee.

Members of the Committees are the Deputy Minister of Fisheries and Forestry of Canada and the Deputy Ministers of provincial departments responsible for fisheries. Sub-committees make recommendations for industrial development, research and marketing problems. The main committee in each case co-ordinates, where practicable, all activities in the respective fields of responsibility of its members and suggests to the respective government means of carrying out fisheries programs and projects of common concern. These include the development of methods and techniques in the catching of fish and of shore and plant facilities, and studies of the economics of fisheries to ensure that any proposed program of development is soundly based.

Subsection 1.—The Federal Government

The work of the Federal Government in the conservation, development and general regulation of the nation's coastal and freshwater fisheries is performed by three agencies under the Minister of Fisheries and Forestry:—

(1) The Fisheries Service of the Department of Fisheries and Forestry with headquarters at Ottawa, Ont., and regional offices under Regional Directors at Vancouver, B.C., Winnipeg, Man., Quebec, Que., Halifax, N.S., and St. John's, Nfld.

(2) The Fisheries Research Board of Canada with headquarters at Ottawa and biological, technological and oceanographic stations across Canada.

(3) The Fisheries Prices Support Board with headquarters at Ottawa.

A brief outline of the functions of each of these agencies is given in this Subsection.

The Fisheries Service of the Department of Fisheries and Forestry.—Canada's fisheries service began with Confederation and functioned as a branch of other departments until being designated as the Department of Fisheries in 1930. Under the Government Organization Act of 1969, responsibilities of the Department of Fisheries and the Canadian Forestry Service (formerly the Forestry Branch of the Department of Forestry and Rural Development) were combined to form the Department of Fisheries and Forestry.

The Fisheries Service of the Department is responsible for all aspects of fisheries management except fundamental research, including advice on the formulation of fisheries policy and responsibility for its implementation. Programs to give effect to these objectives are conducted through eight functional branches and five administrative regions.

The Conservation and Protection Branch is responsible for the conservation of stocks of fish, shellfish and marine mammals through the establishment and enforcement of regulations. The Resource Development Branch applies scientific and technical means to expand existing fisheries resources and to maintain their physical and biological environment. Programs include water pollution abatement and control, hatchery and artificial spawning channel propagation of anadromous species, sea lamprey control in the Great Lakes, etc.

The Industrial Development Branch conducts programs of exploratory fishing, fishing vessel and gear development and technical assistance with the aim of improving the income of fishermen and the efficiency of the fishing industry. It also administers a fishing vessel insurance plan and programs providing financial assistance for fishery enterprises.

An experimental fishing technique, successfully demonstrated by Fisheries Service personnel to East Coast fishermen, involves the use of small boats working in pairs and co-ordinating their operations by radiotelephone.

The Inspection Branch is responsible for the inspection of fish processing and handlin facilities and of fish products entering interprovincial and export trade; also for the inspec tion of imported fish products and the provision of technical advice to the fish processin and fish handling industries. The Economics Branch assembles and interprets statistica data on the fisheries, and conducts studies and investigations in the primary fisherie and the processing and distribution of fishery products. The International Fisherie Branch is concerned with international consultation and co-operation in fisheries an also with jurisdictional matters, particularly in reference to territorial waters and fishin zones.

The Regional Operations Branch is responsible for the co-ordination and presentatio of regional contributions to policy formulation and for the co-ordination of regional leve operations. Regional Directors responsible for the implementation of Fisheries Servic programs are located in St. John's, Nfld., Halifax, N.S., Quebec, Que., Winnipeg, Man. and Vancouver, B.C.

The Marketing Branch was established in 1970 to assist industry and Crown agencie in the orderly marketing of fisheries products and to conduct marketing studies and assess ments. Activities also include the co-ordination of marketing programs of the Freshwate Fish Marketing Corporation and the Canadian Saltfish Corporation with those of th Department. The Branch shares its staff with the Fisheries Prices Support Board.

International Fisheries.—Recognizing the necessity for the orderly regulation of eries in international waters, Canada has long been a leading participant in inter- ional conferences, conventions and treaties upholding conservation principles. The heries Service of the Department of Fisheries and Forestry assumes a major responsi- ty for the negotiation, revision and implementation of international fisheries treaties on alf of the Government of Canada. The Branch is represented by one of its senior officers each of nine international commissions and one international council established under following conventions to which Canada is a party:—

(1) the Convention between Canada and the United States for the preservation of the halibut fishery of the northern Pacific Ocean and Bering Sea;
(2) the Convention between Canada and the United States for the protection, preservation and extension of the sockeye and pink salmon fisheries in the Fraser River system;
(3) the International Convention for the High Seas Fisheries of the North Pacific Ocean between Canada, Japan and the United States;
(4) the Interim Convention on Conservation of North Pacific Fur Seals between Canada, Japan, the Soviet Union and the United States;
(5) the International Convention for the Northwest Atlantic Fisheries;
(6) the Convention on Great Lakes Fisheries between Canada and the United States;
(7) the International Convention for the Regulation of Whaling;
(8) the Convention for the Establishment of an Inter-American Tropical Tuna Commission;
(9) the International Council for the Exploration of the Seas; and
(10) the International Convention for the Conservation of Atlantic Tunas.

The first international agreement contracted by Canada as an independent nation s a treaty negotiated with the United States in 1923 for the protection of halibut stocks the Pacific Ocean. An international commission established under that treaty was en broader regulatory powers in subsequent conventions, most recently in 1953 when name was changed to the International Pacific Halibut Commission.

The International Pacific Salmon Fisheries Commission has achieved much success ward rehabilitation of depleted salmon stocks in the Fraser River of British Columbia. scussions were held in 1965 and 1966 between representatives of Canada and the United tes to consider revision of the 1956 protocol which brought pink salmon of the conven- n area within the scope of the Commission's activities. Negotiations also took place ring the same period and through 1967 in an endeavour to reach agreement on problems sing from the intermingling of salmon bound for rivers of northern British Columbia l southeastern Alaska.

Protection of the high seas fisheries of the North Pacific Ocean is the objective of the ternational North Pacific Fisheries Commission established under a convention ratified 1953 by Canada, Japan and the United States. The Commission conducts co-ordinated ntific research programs and recommends conservation measures to be undertaken the contracting parties.

Fur seal stocks of the North Pacific and its adjacent seas are protected by the Interim nvention on Conservation of North Pacific Fur Seals which was ratified in 1957 by nada, Japan, the Soviet Union and the United States, and amended by a protocol in 64. This convention was preceded by an international treaty signed in 1911 which hibited the killing of fur seals at sea—a measure which, aided by careful management grams, made possible the restoration of depleted seal herds. At the present time, der the terms of the convention, Canada and Japan each receives annually 15 p.c. of the l skins taken on the United States-controlled Pribilof Islands, and 1,500 skins from the rvest of the Soviet-controlled Commander and Robben Islands.

The International Commission for the Northwest Atlantic Fisheries (ICNAF) conducts dies and makes recommendations for measures to conserve and develop the fish stocks off nada's East Coast. The convention establishing the Commission was signed in 1949

and has since been ratified by 14 nations: Britain, Canada, Denmark, the Federal Repub of Germany, France, Iceland, Italy, Norway, Poland, Portugal, Romania, Spain, the Sov Union and the United States. Major conservation regulations adopted by the Commissi have been related to minimum mesh sizes for trawl nets. In 1969, additional regulatio were proposed for certain heavily fished stocks, including closed seasons and over-all ca limits. These are now in effect for all member nations. In 1970, a scheme of internatio enforcement was proposed whereby protection officers would be empowered to enfo conservation regulations adopted by the Commission not only for their own flag vessels b also for fishing vessels of other member countries.

The Great Lakes Fishery Commission, set up under the 1955 Great Lakes Fisher Convention, provides a channel for joint action by Canada and the United States research into Great Lakes fish stocks and a program to control the parasitic sea lampr responsible for depleting lake trout stocks.

As a member of the International Whaling Commission, Canada is obligated to subm statistical data on whales caught by Canadian vessels and to conduct scientific studies whale stocks of special interest to Canada.

In 1967, Canada approved adherence to the Inter-American Tropical Tuna Commissi This Commission was established in 1950 by a convention between the Republic of Co Rica and the United States with the aim of studying relationships between the populatio of yellowfin and skipjack tunas and other kinds of fish taken by tuna vessels in the east Pacific. Because of increasing Canadian interest in the tuna fishery, Canada became signatory to the convention. Panama and Mexico are also Commission members.

Canada in 1967 became identified as a member of the International Council for t Exploration of the Seas. First established in Copenhagen in 1902, when it was entrust with co-ordination of international investigations of the seas, particularly those in t eastern North Atlantic Ocean, ICES has in recent years provided considerable scienti support to the Research and Statistics Committee of ICNAF. There are 16 other memb states: Belgium, Britain, Denmark, Finland, France, Germany, Holland, Iceland, Irelan Italy, Norway, Poland, Portugal, the Soviet Union, Spain and Sweden.

The International Commission for the Conservation of Atlantic Tunas held its fi meeting in 1969 with representatives attending from Brazil, Canada, France, Ghana, Japa Morocco, Portugal, South Africa, Spain and the United States. Madrid has been select as the headquarters for this newly formed Commission, which will undertake studies stocks of tuna and tuna-like fishes in the Atlantic Ocean and its adjacent seas. It w recommend to the contracting parties measures for maintaining stocks of these fishes levels that would permit the maximum sustainable catch yields for the various species.

In 1967, Canada was one of 18 nations represented at a Fisheries Policing Conferen held in London, England, to consider regulations designed for safety at sea for vessels countries fishing the North Atlantic. The conference endorsed a Convention on the Co duct of Fishing Operations in the North Atlantic and North Sea which was referred f ratification by the respective governments.

While co-operating with other nations to conserve high seas fisheries resources throu international agreement, Canada acted in 1964 to protect inshore fisheries by establishi a 12-mile exclusive fishing zone on all coasts. The Territorial Sea and Fishing Zones A proclaimed in that year has since been enforced against all countries except those havi traditional fishing rights. Negotiations have been conducted with these latter countri with regard to the application of the fishing zones and to the location of base lines fr which they are measured.

As evidence of its support for international consultation and co-operation in fisheri Canada maintains active membership in the Fisheries Department of the Food and Agric ture Organization of the United Nations and in the Codex Alimentarius Commission whi is concerned with world food quality standards.

The Biological Station of the Fisheries Research Board at Nanaimo, B.C., has recently been enlarged to permit extension of the Board's efforts to solve urgent problems in the management of the fisheries and in the protection of the aquatic environment.

Fed on a diet of dogfish chunks, this blackcod weighs 4½ lb. (half commercial size) after one year in the Station's culture tank.

The Fisheries Research Board of Canada.—The Fisheries Research Board is a rch organization established by Act of Parliament (RSC 1952, c. 121) for the purpose nducting basic and applied research on Canada's living aquatic resources, their environ-

ment and their utilization. Its antecedents go back to 1898 and it is thus the lineal d scendant of one of the oldest scientific organizations in Canada and one of the oldest gover ment-supported research organizations under the supervision of an independent scienti board in North America.

By its Act, the Board is placed under the control of the Minister of Fisheries a Forestry. The Board proper consists of a permanent chairman, who is appointed by t Governor in Council and who is a member of the Public Service of Canada, and "not mo than eighteen other members" holding honorary appointments from the Minister of Fis eries for five-year terms; the Act requires that "a majority of the members of the Boa not including the chairman, shall be scientists, and the remaining members of the Boa shall be representative of the Department (of Fisheries and Forestry) and the fishi industry". The scientific members are drawn principally from universities and resear foundations across Canada, to include specialists in disciplines related to the Board's wo The industry members are selected from among Canada's leading businessmen with intimate knowledge of fishing and the fishing industry, and the Fisheries Service of t Department of Fisheries and Forestry representative is usually a senior staff member Ottawa. Board members have both advisory and executive functions. The adviso functions are delegated in the first instance to regional Advisory Committees who condu on-the-spot regional reviews and report to the Board on the operations and scienti programs with a view to their improvement. The executive functions are delegated to Executive Committee elected from Board members and approved by the Minister.

The operations of the Board are highly decentralized, there being only a small admi strative supervisory and publications staff in Ottawa. The responsibilities of the Otta office include planning and program co-ordination, and administration of a grant progra to encourage university research in the fields of marine and aquatic science. The Boa employs approximately 800 persons, of whom about 250 are scientists.

Commercial and Recreational Fisheries.—This program area is designed to add fundamental knowledge concerning Canada's vast living marine and freshwater resourc Included are life history, population and behaviour studies leading to a sound scienti basis for the conservation and management of the commercially important fisheries includi those for lobsters, crabs, shrimps, oysters, scallops, clams, marine mammals and other w known economically important aquatic species of animals, such as salmon, cod, herring a halibut, as well as some marine plants, such as phytoplankton and seaweeds. Also inclu are studies in fish and shellfish diseases, fish predators and such basic studies as fish geneti physiology and behaviour, the latter with a view to improving fish cultural and farmi methods and also to improving fish farm and hatchery stocks. Besides these basic studi new fishing grounds and new species for exploitation are sought and experiments in impr ing fishing methods are undertaken.

On the Atlantic Coast this work is conducted out of research stations located St. Andrews, N.B., and St. John's, Nfld.; work on Arctic fisheries and on sea mammals directed from a laboratory situated in Ste. Anne de Bellevue, Que.; freshwater work carried out from a station in Winnipeg, Man.; and work on the Pacific Coast is direc from research laboratories situated in Nanaimo, B.C. The Board operates 16 resea vessels for its biological studies varying from small inshore and lake craft to specially b seagoing ships. The Board acts as Canada's research agent for three international fishe commissions and two international sea-mammal commissions to which Canada is party.

Aquatic Environment.—This program emphasizes the study of the marine and fre water environment in which aquatic organisms live. This is under continuing study further knowledge in primary and secondary productivity and the occurrence of ocean freshwater life of importance to man. Considerable importance is placed upon increa research efforts associated with pollution prediction, abatement and elimination, includ the effects of freshwater and marine eutrophication. Encompassed here also are investi tions into the distribution and physical and chemical characteristics of major ocean curre

d the physical and biological structures of large ocean areas including the ocean bottom ıere concentrations of fish and other aquatic life occur. Ocean climate and ocean weather they affect the distribution of fish and other living organisms as well as the vertical and rizontal distribution of nutrient matter and the cycle of energy and life in the seas are gularly observed and correlated. These studies, as well as special studies of interest to e Armed Forces, the Ministry of Transport and the international fishery commissions, e carried out by groups operating from Dartmouth, N.S., and Nanaimo, B.C., with strong p support from the Armed Forces and the Ministry of Transport, and with co-operation m the Department of Energy, Mines and Resources.

Products and Processing.—Investigations are conducted toward improving methods preserving, processing, storing and distributing fish products, as well as of utilizing all rts of the fish. These include developments in refrigeration and the use of antibiotics as n preservatives, improvements in canning, smoking and salting of fish as well as the velopment of new products for the utilization of abundant species that are not now used food. Fundamental studies of the structure and composition of fish proteins, marine s, hormones from aquatic organisms and other products from the sea are under way.

These investigations are carried out on the Atlantic Coast at research laboratories uated in Halifax, N.S., and at St. John's, Nfld. For inland products and processing, earch is centred at Winnipeg, Man., and a research laboratory in Vancouver, B.C., dertakes investigation of Pacific Coast problems.

The Fisheries Prices Support Board.—Established under the Fisheries Prices pport Act of 1944 (RSC 1952, c. 120), the Fisheries Prices Support Board is responsible investigating and, where appropriate, recommending government action to support ces of fishery products where declines are experienced. The basic principle of the islation is to protect fishermen against sharp declines in prices and consequent loss of ome due to causes beyond the control of the fishermen. The Board is responsible to e Minister of Fisheries and Forestry and consists of a chairman, who is a senior officer the Fisheries Service of the Department of Fisheries and Forestry and five members osen from the fishing industry in the various fishing regions of Canada.

The Board has authority to buy quality fishery products under prescribed conditions d to dispose of them by sale or otherwise, or to pay to producers the difference between price prescribed by the Board and the average price the product actually commands. e Board has no power to control prices other than its purchase policy nor has it any risdiction over operations in the fishing industry or the fish trade. Money necessary dealings in fishery products is available to the Board from the Consolidated Revenue nd to a maximum amount of $25,000,000 annually on recommendation of the federal easury Board and authorization of the Governor in Council.

In May 1969, the Board initiated a frozen groundfish stabilization program with the jective of forestalling distress selling in normal markets and to raise the market price of ected groundfish products to a point where basic costs were recovered. Purchases by e Board of 17,500,000 lb. of cod blocks and fillets represented 26 p.c. of the total produc- n. Before the end of the 1969-70 fiscal year, the entire supply purchased was returned, cost, to the industry. The market price for cod blocks, which had been approximately cents a pound, rose to the 26-27-cent level at year-end.

To assist salted codfish fishermen who had experienced severe price declines as the ult of over-supply and currency devaluation in some traditional markets, a deficiency yment program was introduced for the 1969 production season. The deficiency payment eived by fishermen amounted to one half the difference between the price actually eived for each particular size and grade and a target price which was based upon the urns to fishermen during the 1967 season.

During the 1969-70 fiscal year, a total of 5,403 individual payments were made to hermen or groups of fishermen.

Since 1966 the Fisheries Prices Support Board has operated yellow perch price stabiliza tion programs. Losses resulted on the 1967 and 1968 programs but the 1969 program wa operated without loss to the Government of Canada. Under the 1969 program, yello perch fillets were purchased from processors at 40 cents a pound, provided fishermen receive 10 cents a pound for spring perch used in the production of fillets and a minimum of fiv cents for all spring perch purchased in excess of the prevailing filleting capacity. Durin the spring season, the price to fishermen was actually blended, with the result that fisherme received 8.6 cents a pound during the spring season and an average of 11.4 cents during th remainder of the year. Despite the record 30,000,000 lb. Lake Erie yellow perch catch these were the highest average prices received by fishermen since 1965.

To assist in meeting the Canadian requirements for the World Food Programme and t assist in providing additional employment in those areas capable of producing canne mackerel, the Board has been purchasing, since 1966, canned mackerel for shipment t developing nations. Board purchases, under this program, averaged 17,493 cases durin the 1966-68 period. During 1969 the original allocation to processors totalled 23,040 case World Food Programme requirements necessitated the purchase of an additional 4,000 case By the end of the 1969-70 fiscal year, the entire Board holdings had been shipped on orde received through the World Food Programme.

The Freshwater Fish Marketing Corporation.—This Corporation was establishe in 1969 (SC 1968-69, c. 21) for the purpose of marketing and trading in fish, fish product and fish byproducts in and out of Canada with the objective of ensuring more orderl marketing for the benefit of the whole fishery and achieving higher and more stable price for the catch. (See also p. 159.)

The Canadian Saltfish Corporation.—On Feb. 25, 1970, the House of Common passed legislation (SC 1969-70, c. 32) authorizing the establishment of a corporation, th objects of which are to improve the earnings of primary producers of cured saltfish b buying and curing fish and by regulating interprovincial and export trade in both cure fish and byproducts of fish-curing. The Corporation, whose head office is at St. John' Nfld., consists of a board of directors composed of a chairman, a president, one director fo each participating province and not more than five other directors, each of whom is ap pointed by the Governor in Council. It is assisted by an advisory committee of 15 membe at least half of whom are fishermen or representative of fishermen. The limit of th Corporation's financial obligations is placed at $10,000,000.

Subsection 2.—The Provincial Governments*

An outline of the work undertaken by each of the provincial governments in con nection with administration of commercial and game fisheries is given in the followin paragraphs.

Newfoundland.—The provincial Department of Fisheries in conjunction with th Newfoundland Fisheries Development Authority, a Crown corporation established i 1953, is concerned mainly with the improvement and development of fishing and produc tion methods. It conducts experiments and demonstrations in new designs of fishin gear as well as the modification of existing types, the construction of multi-purpose fishin craft and the exploration of potential fishing grounds with a view to increasing catchin efficiency.

Loans are made to processors for the establishment and expansion of fish processin plants and for deepsea draggers. Aid to fishermen for the construction of modern vesse capable of a greater variety of fishing operations and larger production is provided b loans from the Newfoundland Fisheries Loan Board and bounty payments at the rate c $160 a ton for newly constructed vessels under the Fishing Ships (Bounties) Act, 195

* Prepared by the respective provincial departments responsible for fisheries administration.

e Fishing and Coasting Vessels Rebuilding and Repairs (Bounties) Act, 1958 authorizes ancial assistance in maintaining and prolonging the life of the existing fleet. An Inshore sheries Assistance Programme provides a maximum bounty of $10 a foot on boats easuring from 24 to 35 feet and bounties are also paid to fishermen on certain types of nthetic fibre fishing nets and lines. The Coasting Vessels (Bounties) Act, 1959 authorizes e granting, for locally built ships, of a maximum bounty of $250 a ton for vessels measur- from 15 to less than 100 gross tons, and $150 a ton for vessels of between 100 and 400 oss tons.

Other services include: advisory services to fishermen on gear and equipment, industrial esearch, plant construction, plant engineering and economics; assistance to fishermen's ions; weather and ice reports; and search and rescue. The Fisheries Salt Act, 1957 ovides for rigid control over the use of fisheries salt.

Sport Fisheries.—The inland waters of Newfoundland, although they provide excellent ort fishing, are not commercially exploited. The lakes and ponds actually remain under e authority of the Natural Resources Branch of the provincial Department of Mines, griculture and Resources but, under federal-provincial agreement, these waters, including vers and streams, are under federal control in matters of conservation and guardianship.

Prince Edward Island.—The sea and inland fisheries of Prince Edward Island are ministered by the Fisheries Service of the federal Department of Fisheries and Forestry. he provincial Department of Fisheries supplements federal activity in this area and is ncerned principally with quantifying and, within the terms of the provincial role in heries management, maximizing returns, both social and economic, to those engaged in e fisheries industry. The Department provides technical assistance and, in conjunction th the federal fisheries organizations, engages in experimental and developmental work such fields as fishing methods, resource inventories, statistical studies and management sistance.

Loans are made available to fishermen and the fishing industry through the Prince dward Island Lending Authority, a Crown corporation established in 1969 which is npowered to grant credit in the sectors of fisheries, industry, tourism and agriculture. he provincial responsibilities in the area of freshwater fisheries are discharged by the Fish d Wildlife Division of the Department of Tourism.

Nova Scotia.—Although the Federal Government has exclusive jurisdiction over the arine and inland fisheries of Nova Scotia and attends to all phases of administration lated thereto, the Nova Scotia Government operates in several fields where provincial itiative is found to be necessary and appropriate, having regard for the importance of e fishery resources in terms of employment, industry, trade and recreation.

In the commercial fisheries, provincial government interests are the concern of the ova Scotia Department of Fisheries. The Fishermen's Loan Board is administered by at Department and the Industrial Loan Board by the Nova Scotia Department of rade and Industry; the first makes loans to fishermen for the purchase of boats and gines and the second makes loans for the construction or improvement of fish processing ants. Fisheries engineers perform inspection and survey duties for the Loan Boards d provide technical assistance and advice to loan applicants and others in the fisheries d allied industries, notably the boatbuilding industry. Instructors conduct courses for hermen in the care and maintenance of marine engines, in basic navigation and in the sign, construction and maintenance of gear. The on-course instruction is supplemented equently by informal on-the-spot assistance to smaller groups who find themselves in ed of technical help with particular problems. The Nova Scotia Department of Fisheries, th the financial and/or technical assistance of the federal Department of Fisheries and restry, organizes and conducts explorations of fishing grounds for new resources and udies the adaptability of new, improved gear and methods.

Sport Fisheries.—In recent years, Nova Scotia, through the Wildlife Conservati Division of its Department of Lands and Forests, has spent a considerable amount of mon on management and research in certain lakes and streams in the province with a view aiding the Atlantic salmon and trout fishery. A continuing program of lake and strea investigations was begun in 1961 in order to obtain information useful in the formulati of a fish management program for the future. A system of rearing ponds, capable producing 100,000 yearling speckled trout annually, has been established on the Moser Riv in Halifax County. Several projects dealing with reclamation, farm ponds, rainbow tro and smallmouth bass are also being conducted. A full-time fisheries biologist is employ by the Division.

The Nova Scotia Travel Bureau, a division of the provincial Department of Tra and Industry, has been promoting saltwater sport fishing by conducting a series of cours for captains contemplating the establishment of charter services, awarding prizes sportsmen with the largest tuna and bass catches of the season, sponsoring the Inte national Tuna Cup Match and the Intercollegiate Game Fish Seminar and Fishing Matc and publishing a brochure listing charter boats available in the province.

New Brunswick.—Commercial fishing is one of the most important basic industri of New Brunswick, employing about 6,200 fishermen with annual earnings of $16,000,000 a 3,000 plant workers. The annual marketed value of fish products is about $65,000,000 which 90 p.c. is exported to the United States. New Brunswick's commercial fisherie both tidal and inland, are under the legislative jurisdiction of the federal Department Fisheries and Forestry; angling in Crown waters is the responsibility of the provinci Department of Natural Resources.

The New Brunswick Department of Fisheries, established in 1963, has four Branche The *General Administration Branch* is responsible for personnel, accounting and field sta and supervises the regional offices covering the three main fishing areas of the provinc It maintains close liaison with various government departments and agencies, both feder and provincial, to assist the fishing industry in the province.

The functions of the *Boatbuilding and Maintenance Branch,* with a personnel consistin of marine engineers, a naval architect and boat inspectors, include the study, modificatio and approval of plans and specifications of the numerous types and classes of fishing vesse employed in the fisheries of the province as well as the inspection of vessels financed by th Fishermen's Loan Board. New designs are being introduced and the trend to larger, mo modern vessels is becoming more prevalent. Combination multi-purpose vessels hav proved profitable to both inshore and offshore fishermen. Under the leadership of th experienced staff of this Branch, New Brunswick fishermen are now operating a fle geared for diversified operation, permitting the inexpensive and easy conversion from on fishery operation to more lucrative operations throughout the season. A new 600-to capacity marine railway dry dock was put into operation at Bas Caraquet in November 196 to service the expanding offshore fishing fleet of northeast New Brunswick. A 200-to transfer system adjacent to the dry dock provides storage facilities for smaller vessels t lay up for the winter or to undergo major repairs. Shipbuilding and repairing facilities, a present under construction on a site adjacent to the slip, will provide ready and adequat service to an expanding offshore fishing fleet.

The *Exploratory Fishing and Education Branch* continues the experimental and explora tory fishing and fish processing projects that have been carried on for many years in co operation with the Industrial Development Service of the federal Department of Fisherie and Forestry. Technical and financial assistance are made available to the New Brunswic Department of Fisheries for projects undertaken toward modernizing fishing and processin methods, experimenting with new types of fish-catching equipment and demonstrating it operation to fishermen, and exploring and developing hitherto unexploited or under exploited species of molluscs, crustaceans, fishes and seaweeds. Results of this extensiv experimental work and research studies include the establishment of queen crab, shrimp

a and eel fisheries in New Brunswick. During 1969-70, nine fisheries development ects were undertaken on a shared-cost basis with the federal Department of Fisheries and estry. Of particular interest was the queen crab development which included the de- ing and construction of special equipment. In 1969, 75 vessels fished this deepsea cacy and several million pounds were processed in 20 crab plants. Shrimp exploration started in the Gulf of St. Lawrence in 1966 with encouraging results; seven plants are processing shrimps from the Bay of Fundy and the Gulf of St. Lawrence. Other elopments such as Irish moss, eels, mackerel, scallops and smelts are also processing very sfactorily. The Branch operates a modern school of fisheries at Caraquet where, in 8-69, 151 fishermen took training in the various phases of their trade. The school gram includes navigation, administration, marine biology, oceanography, radiotelephone, al and woodworking, arithmetic and languages and other related subjects and graduates receive practical training aboard large modern fishing vessels under a joint federal-vincial program of technical upgrading. Following a few weeks of training, apprentices taken on as regular crew members.

The *Fish Inspection and Marketing Branch* is responsible for the administration of the w Brunswick Fish Inspection Act and Regulations. For greater effectiveness and to id duplication of personnel, 30 Fish Inspectors of the federal Department of Fisheries Forestry, Maritimes Area, carry out the application of the New Brunswick Fish Inspec- Act and Regulations. The Branch is active in promoting the expansion and moderniza- of existing plants as well as the establishment of additional fish processing plants in province. Its efforts are aimed at studying existing markets and developing new ones fishery products at home and abroad in collaboration with other government agencies, eral and provincial. The Branch is also responsible for publicity and information to the ustry and the general public.

The *Fishermen's Loan Board of New Brunswick* is a body corporate operating under jurisdiction of the Minister of Fisheries. It was established in 1946 and is now operating er the Fishermen's Loan Board Act of 1952 and the regulations of Nov. 1, 1963. Its ction is to improve and develop the fishing industry of the province by providing adequate ncial assistance to individual fishermen, groups, associations, processing firms and porations, at a moderate rate of interest to construct modern fishing vessels, make or repairs and purchase engines and equipment. Since its inception the Board has nted 2,076 loans to New Brunswick fishermen for a total of over $26,721,000; outstanding ns amounted to $11,000,000 in 1969.

Loans are repayable within a five-year period on small inshore fishing vessels; repay- nt schedules on large trawlers may extend to 15 years, based on the gross proceeds of the ch. Most of the new fishing vessels being built for fishermen and fish processing firms the province are financed by the Board. The Board acts as agent for the federal partment of Fisheries and Forestry financial assistance program granted to owners of fishing vessels, which are not eligible for the shipbuilding subsidy granted by the federal partment of Industry.

Sport Fisheries.—Sport fishing contributes substantially to the economy of the province. at Atlantic salmon rivers like the Miramichi, the Restigouche and the St. John are wn around the world for their prolific production of this majestic game fish and attract ny thousands of tourists to the province each year. Anglers catch as many as 50,000 non a year in the Miramichi system alone. Many other species are also sought after by h residents and non-residents in the hundreds of streams, rivers and lakes of the province.

Quebec.—The sea fisheries of Quebec are administered by the Fisheries Branch of Quebec Department of Industry and Commerce, which carries on its functions through ee Divisions—Research, Economics and Technical Services. The Research Division is olved in experimental work and study on the biological aspects of commercial fish species, the processing of seafoods for marketing, and on the testing of new types of fishing gear. e work of the Biological Service of the Division is facilitated by the availability of

extensive research equipment at the Marine Biology Station in Grande Rivière and the Aquarium in Quebec City. The latter also fulfils an information role through displays, in 60 large tanks, of many freshwater and saltwater species.

One of the main functions of the Economics Division is to administer the loan program which applies to construction and repair of boats, as well as to administer other forms government assistance. In 1969, the active offshore fishing fleet included three 166-fo and three 129-foot steel trawlers, one 100-foot dragger, 15 87-foot trawlers, 14 82-fo trawlers, 74 60-to-65-foot trawlers and 48 45-to-54-foot "gaspésiennes" and long-liners. at Mar. 31, 1970, owners of these fishing vessels held outstanding government loans, for bo construction and repair, totalling nearly $10,000,000. This represents an improvement some $2,000,000 over the situation of a year earlier. The Economics Division also carri out socio-economic analyses which are necessary to the government in planning action the field of fisheries and in ensuring the efficiency of development projects.

The Technical Services Division conducts regular inspections of fishing vessels, kee close supervision over the operations of maintenance and repair crews and also supervis the tenders submitted to fishermen by shipyards or other suppliers. Its protective servi issues fishing permits, conducts land and sea patrols and investigates infractions of reg lations. The Division includes an Engineering Service which draws up plans and spe fications related to improvements in fishing equipment and a Refrigeration Service whi administers Fisheries Branch equipment, including 39 cold storage warehouses with a dai freezing capacity of 500 tons and a storage capacity of 25,000,000 lb., 95 stations in sm fishing ports where fish is kept in good condition awaiting pickup by truck or boat, and number of other service or production establishments.

Fisheries Branch administration is centralized in Quebec City, with offices in the ma fishing centres. In co-operation with the Department of Education, it conducts a traini program for fishermen and producers for which it maintains a fisheries school and a traini vessel. The Department of Industry and Commerce works closely with the Queb Planning and Development Board and with the Eastern Quebec Regional Administrati Conference in the administration of various development programs, one of which is training program designed to advance the domestic use of seafoods.

Sport Fisheries.—Sport fishing in the inland waters of Quebec is under the jurisdicti of the Department of Tourism, Fish and Game, which employs 417 full-time wardens a issues the required sport-fishing licences. Four hatcheries are maintained by the Depa ment, where speckled trout, brown trout, rainbow trout, grey trout, ouananiche, maskinon and salmon are reared for the restocking of lakes and streams.

Excellent fishing may be found in all provincial parks and reserves. Gaspesian a Laurentide Parks are renowned for trout fishing, and the waters of Chibougamau Reser and La Vérendrye Park, situated on the height of land, abound in pickerel, pike, and gr and speckled trout. Eleven salmon streams are open to anglers—the Petit Saguenay Riv the Laval River, the Moisie River, the Matane River, the Cap Chat River, the Ste. An River, the St. Jean River, the Matapédia River, the Dartmouth River, the Port Dan River and the Petite Cascapédia.

A committee made up of directors of the Quebec Wildlife Federation makes reco mendations to the provincial government concerning legislation required for the mai tenance of satisfactory fishing and hunting conditions and other problems arising out of t ever-changing conditions of modern life and their effect on the wildlife of the province.

Ontario.—The fishery resources of Ontario are administered by the Fish and Wildl Branch, Department of Lands and Forests, under the authority of the federal Fisher Act, the Fishery Regulations for the Province of Ontario, the Ontario Game and Fi Act and the Regulations connected therewith.

Commercial Fisheries.—The commercial fishing industry in Ontario provides emplo ment for about 2,100 persons directly and for many more indirectly, and produces annual yield of from 45,000,000 lb. to 60,000,000 lb. of fish. The industry, althou

lely scattered throughout the province, is centred chiefly on the Great Lakes, particu-y Lake Erie. The principal species of fish taken commercially are perch, smelt, white-, pickerel, lake trout, white bass, pike, herring, chub, sheepshead, carp, catfish and lheads, sturgeon, eel, goldeye, rock bass, sunfish and suckers. Over one hundred aller inland lakes are commercially fished, principally those in the northwestern portion the province, and careful management of these lakes is essential to ensure continued duction.

The types of fishing boats in use vary from small craft to 70-foot tugs, and types of gear y from gillnets, pound-nets and trap-nets, seines, trawls and baited hooks to small hand-rated seines and dip-nets. Fishing methods and equipment have been modernized ensively during the past few years. Diesel-driven steel-hull tugs have replaced steam-ven wooden tugs, such aids as depth-sounding devices, radar, ship-to-shore and ship-ship communications have been developed, and a better knowledge of the fish and their vements has been established from biological research findings. Modern icing facilities l transportation methods are in use as well as new types of fishing gear. Trawling has ved very efficient in harvesting smelt on a year-round basis in Lake Erie.

Most Ontario fishermen are organized into various local associations. Many of these ociations are, in turn, represented by the Ontario Council of Commercial Fisheries ich performs important services to the industry. The Ontario Fishermen's Co-operative l its member groups are of importance also in the organization of the fishery in the vince.

Sport Fisheries.—Angling in Ontario is rapidly becoming one of the major industries he province. With an estimated freshwater area of some 68,490 sq. miles, the province ne of the most attractive fishing areas on the Continent. Excellent angling oppor-ities are available for such prized fish as brook, rainbow, lake and brown trout, walleye, allmouth and largemouth bass, pike and maskinonge. It is difficult to measure the al value of the sport fishing industry to the province but the annual revenue from the e of angling licences alone is in the neighbourhood of $5,900,000. The management of s valuable resource is administered by a well-trained field staff of conservation officers and logists located in the 21 forest districts of the province.

Provincial Hatcheries.—Ontario operates 16 hatcheries and rearing stations, the main cies reared in these operations being brook trout, rainbow trout, lake trout, "splake", allmouth and largemouth bass, and maskinonge. A program of modernization of the chery system is being undertaken—the Normandale Hatchery in Norfolk County and North Bay Station have recently been completely renovated.

Fisheries Research.—Research in Ontario is carried on in the Great Lakes and in inland ters. At the South Bay Mouth Station on Manitoulin Island in Lake Huron, Sault Ste rie on Lake Superior, Wheatley on Lake Erie, and Glenora on the Bay of Quinte on Lake tario, fishery biological stations are operated for the investigation and study of the com-rcial and sport fisheries on the respective lakes. In Algonquin Park, detailed studies cerning lake trout, smallmouth bass and brook trout are in progress and management hniques are being tested against the background of a creel census which has been con-uous since 1936. Studies are also being conducted on walleye, parasitology and limno-y. A selective breeding experiment concerning the hybrid (splake) of lake trout and ok trout is progressing; the deep-swimming character of the lake trout and the character maturity at early age of the brook trout are those being selected for combination in hybrid. Investigations include the study of exotic species of fish for use in the Great es. Kokanee (sockeye salmon) plantings have been made in Lake Ontario and Lake ron.

Manitoba.—Manitoba's interior location belies the importance of its fisheries resources ch stem from an abundance of water comprising 40,000 sq. miles of lakes and streams ering 16 p.c. of the area of the province. These resources are utilized for commercial, rt and domestic purposes.

The commercial fishery in 1968-69 produced nearly 26,000,000 lb. of fish, an incre of 4,900,000 lb. over the previous year. Northern waters contributed 9,500,000 lb. (37 p. followed by Lake Winnipeg with 7,900,000 lb. (30 p.c.) and Lakes Winnipegosis Manitoba with 4,100,000 lb. (16 p.c.) and 3,800,000 lb. (15 p.c.), respectively. Ot southern lakes were responsible for the remainder of the commercial production. T commercial fishery utilizes an estimated 22,000 sq. miles of water. Most of the 145 wa bodies commercially fished in northern Manitoba are each less than 50 sq. miles but to 8,000 sq. miles. Lakes Winnipeg, Winnipegosis and Manitoba have a combined area 13,000 sq. miles and other commercially fished waters in southern Manitoba are 1,000 miles in extent.

Fifteen species or groups of species enter into the commercial catch. Six speci however, predominate. In 1968-69, pike contributed 5,350,000 lb. followed closely whitefish with 5,290,000 lb. Suckers, saugers and pickerel (walleye) contributed fr 3,000,000 to nearly 5,000,000 lb. each. The tullibee production was 1,000,000 lb. T value to the fishermen was $3,300,000. Most of the commercial catch is exported to t United States. Gillnets are the main fishing gear although there is a limited use of tr nets on Lake Winnipeg. About 2,300 persons were employed during the open-wa fishery and 1,700 took part in winter fishing. The value of equipment totalled $3,000,0

The sport fishery is increasing in importance, with walleye, pike, perch and seve kinds of trout being the principal sport fishes. The number of angling licences sold 1968-69 totalled 119,852 of which 98,896 were purchased by residents of Canada. estimated 13,000,000 lb. of fish are caught by anglers each year. A Master Angler Aw is given to fishermen who catch fish of trophy size. In 1968-69, 1,183 awards were iss for 16 species of fish, most of them (478) for pike. Fish is harvested by many native peo for local use. The quantity taken in this manner is unknown but probably is considera

Fisheries administration is under the control of the Department of Mines and Natu Resources. Field administration is divided into four regions. Conservation Offic enforce both the commercial and the angling regulations and carry out numerous other du in connection with fisheries management. Professionally trained biologists carry ou continuing program of studies which not only monitor the resource but also extend knowledge of it. Fish culture plays an important role in fisheries management. Pick hatcheries are located on Lakes Winnipegosis and Manitoba. Lake Winnipeg has t hatcheries, one at Dauphin River and the other at Grand Rapids. A trout hatchery located in the Whiteshell Provincial Park. Two temporary facilities for collection spawn are also used.

Saskatchewan.—Approximately 32,000 sq. miles of water, about one eighth Saskatchewan's area, provide the basis for a fishery resource that contributes much to economic and recreational activity of the province. The Fisheries Branch of the Dep ment of Natural Resources, with head office at Prince Albert, administers the fisher The Branch has three main Divisions—Management, Research and Fish Culture—wh are responsible for planning policies; developing programs to ensure the proper manage and utilization of the fishery resource; interpreting and explaining policies, programs a regulations; administering the Acts and Regulations (both federal and provincial); a adapting regulations to meet changing conditions. The objective is to encourage effici multi-use of the fishery, taking into consideration the interests of the various groups c cerned—commercial fishermen, mink ranchers, anglers and the public generally.

In 1968-69 the Saskatchewan commercial fishery harvested approximately 11,000,000 of fish, having a landed value to the fishermen of $1,400,000 and a market value of $2,800,0 In addition, a commercial harvest of 315,000 lb. of brine shrimp and brine shrimp eggs w taken from several saline lakes in southern Saskatchewan. These are processed for s to fish hobbyists. Although low fur prices continued to exert a depressing influence mink ranching in Saskatchewan, 31 ranches in 1968 harvested approximately 4,000,000 of fish to feed 6,600 mink.

Saskatchewan continues to produce some of the finest sport fishing in Canada, as enced by the increasing number of anglers licensed. In 1968 a record total of 130,442 ing licences were sold, representing a 14-p.c. increase in sales over 1967. As in previous s, outstanding numbers of northern pike, lake trout, walleye, brook trout, brown t and rainbow trout were taken.

A continuous program of inventory and examination of sport fishing stocks is main- ed by the Management Division of the Fisheries Branch. During 1968, 161 waters examined. The stocked game trout program continues to grow in popularity; to date, akes and 40 streams and rivers have been stocked with various species of trout and on.

The Fish Research Division conducts biological surveys on most of the large lakes and many smaller water bodies and streams in the province to provide information for the elopment of fisheries management policies and programs. The current program is gned to determine productivity of water bodies, secure information on abundance and tionship of fish species, investigate ecology and assess factors affecting environment of develop techniques to achieve maximum harvest of fish populations without prejudice ontinued production, and develop techniques to facilitate rehabilitation and stocking mall water bodies. Limnological and fisheries investigations are continuing on recently blished reservoirs on the South Saskatchewan River, including Lake Diefenbaker. long-term creel census on Lac la Ronge is being supplemented by an intensive investi- on of the life history and ecology of northern pike. Additional creel censuses are also er way on Nemeiben Lake, Puskwakau River and the Qu'Appelle Lakes.

The provincial hatchery at Fort Qu'Appelle reared over 12,600,000 fish in 1968 for king in 98 waters.

Alberta.—Commercial and sport fishing are administered by the Fish and Wildlife sion of the Department of Lands and Forests, under the authority of the Fisheries (Canada) and the Fish Marketing Act (Alberta). Production of commercial fish from rta's 6,485 sq. miles of fresh water for the year ended Mar. 31, 1969, was 11,986,639 lb. ded value of the catch was $932,940 and marketed value amounted to $1,466,370. e whitefish is the most valuable commercially caught fish; it accounted for 51 p.c. of total marketed value but represented only 17 p.c. of the total landings. Production of bee (cisco), primarily used for animal food, recovered to a level exceeding that of 1966- it remained in second place in value among the fish marketed. Other species taken, rder of marketed value, were pike, walleye (pickerel), burbot (ling), perch, lake trout suckers. Of the total quantity taken, 2,261,587 lb. were marketed outside the province of this amount, 1,526,746 lb. went to the United States.

Sport Fisheries.—A non-resident non-Canadian angling licence was introduced in 1969, initial sales of 1,621. Resident and non-resident Canadian licence sales increased 136,693 in the year ended Mar. 31, 1968 (including sales to non-resident non-Cana- s) to 139,253 in 1968-69. Fish hatchery facilities in Calgary and the rearing station aven produced 3,456,955 trout and kokanee for stocking in provincial waters. Rainbow t accounted for 85 p.c. of the total and lake trout, brown trout, kokanee and golden t made up the remainder. In addition, 1,161,200 walleye, perch and pike were stocked arious locations where winterkill had removed resident populations or where new oductions were required.

In 1969, headquarters biological staff moved into new laboratory facilities in the O.S. gman Building in Edmonton and a small pollution research section was established. rogram to develop a trained field staff of technicians was begun with the placement of hery technician in Lethbridge.

British Columbia.—A Fisheries Office, which was organized in 1901-02 and became active in fish culture work, building and operating fish hatcheries and instituting tific research into various fishery problems, was superseded in 1947 by the Department

of Fisheries which in turn was superseded in 1957 by the Department of Recreation a Conservation. Today, the Commercial Fisheries Branch of the Department of Recreat and Conservation is the provincial organization concerned with commercial fisher Broadly speaking, the administrative and regulative jurisdiction over the fisheries British Columbia rests with the federal authority. The ownership of the fisheries in non-tidal waters is vested in the Crown in the right of the province, as are the shell fishe such as oyster fishing and clam fishing in tidal waters. The province administers th fisheries although the regulations covering them are made under federal Order in Cou on the advice and recommendation of the province.

The provincial Fisheries Act provides for the taxation of the fisheries and, under c and property rights, for the regulation and control of the various fish processing pla under a system of licensing. The commercial harvesting of oysters and marine aqu plants is regulated by provincial permits and licences. Provision is also made for arbi tion of disputes regarding fish prices that may arise between the fishermen and operat of the various licensed plants. The administration of the Act involves the collection revenue and the supervision of plant operations.

Regulation and administration of net fishing in the non-tidal waters of the provi including commercial fishing and authority for regulation of the game fisheries in non-t waters, is vested in the Fish and Wildlife Branch which operates a number of trout hatche and egg-taking stations for re-stocking purposes.

The Branch co-operates closely with the Fisheries Research Board of Canada. T biological research into those species of shellfish over which the province has cont principally oysters and clams as well as marine plants, is conducted by the Fishe Research Board of Canada at the Pacific Biological Station, Nanaimo, B.C., under ag ment with the federal and provincial authorities. The object of this research is to encour the industry to produce better products more economically and to enable the Commer Fisheries Branch to regulate the various species so that maximum exploitation may obtained on a sustained-yield basis.

PART II.—FURS

Section 1.—The Fur Industry*

The value of raw furs produced in Canada in the 1968-69 season amounted $41,589,086, an increase of 13.8 p.c. over the 1967-68 output almost entirely due higher returns for wildlife pelts. The value of the pelts from fur farms was $22,925,9 largely unchanged from the previous season; farm production accounted for 55.1 p.c the total value.

Fur Trapping.—Although many changes have occurred in the fur industry since era when furs from the wilds dominated the market, the trapper is still an important fig In the 1968-69 season some 40,000 Canadians participated in fur trapping activities wh yielded returns totalling $18,663,153. Trapping is carried on in all the provinces territories, the principal producers in 1968-69, in order of importance, being Ontario (2 p.c.), Quebec (15.5 p.c.), Manitoba (13.8 p.c.) and Alberta (10.4 p.c.).

Although the task of tending the trapline and preparing the catch for the market altered little, the advent of the snowmobile has introduced a new dimension into the No In many areas the trappers have disposed of their dog teams and now use snowmobile make the rounds of their traplines. These machines take much of the drudgery out of long winter trips and eliminate the expense of feeding dogs through the summer mon Gains in this direction must, however, be balanced against some loss of reliability. possibility of mechanical failure, perhaps far out on the trapline, is accentuated by the

* Prepared by the Livestock Division, Production and Marketing Branch, Canada Department of Agricul Ottawa.

peratures encountered throughout the winter months. To obviate the serious conse-nces which may attend such failure, trappers operating on adjoining traplines often k together and arrange to meet regularly at specified locations.

Fur Farming.—Almost two thirds of Canada's fur production now comes from fur ns. Mink is by far the most important species raised and this animal accounts for .c. of the total value of pelts produced on farms. Other animals raised on fur farms chinchilla, fox and nutria.

Mink.—The rather brief history of mink farming records a steady growth in this stry from its beginnings in the early 1900s; the following figures depict the recent wth:—

Year	Pelt Production	Average Realization	Year	Pelt Production	Average Realization
	No.	$		No.	$
1930	3,284	10.52	1965	1,624,154	17.41
1940	229,202	9.64	1966	1,810,691	12.41
1950	589,352	17.08	1967	1,967,323	11.58
1960	1,203,853	14.03	1968	1,667,945	13.60

The development of mink farming in Canada was paralleled and in some instances eeded in a number of other countries, and by 1965 the world output amounted to around 00,000 pelts annually. Throughout this period consumer demand for mink kept pace h and sometimes surpassed the expanding production, and carry-overs of unsold mink s at the auction level, from one season to another, were virtually unknown. From 6 onwards the ability of the world market to absorb the increasing annual production me less assured and in the later 1960s, average realizations for most of the mutation s declined to the point where producers were unable to recover their costs. The weaker rket may be attributed to a number of factors the most important of which is that, after ny years of expansion, the demand for mink in present markets (notably North America continental Europe) appears to have levelled off. As a result of the unfavourable rns, a number of Canadian and American mink farmers have ceased operations in nt years. For the immediate future the resulting decline in the number of pelts avail-e might put fresh life in the market, but over the longer term there is a pressing need to elop new markets for this product.

Chinchilla.—British Columbia, Alberta, Ontario and Quebec account for most of the chilla pelts produced in Canada. The following figures show the production, average es and the number of farms in recent years:—

Year	Pelt Production	Average Realization	Farms at Dec. 31
	No.	$	No.
1955	1,742	27.50	669
1960	9,067	13.06	531
1965	17,109	13.18	556
1966	19,133	11.88	653
1967	17,368	11.11	937
1968	18,854	9.97	1,395

In recent years the number of chinchilla farms has increased sharply. Many of the breeders lack experience in the management of chinchillas and the lower average pelt es registered since 1966 reflect, to some extent, this inexperience.

Fox.—In 1968, foxes were raised on 40 Canadian farms, mainly in Eastern Canada, the breeding herd totalled 1,069 animals (male and female); production amounted to 82 pelts with an average value of $36.34. Higher returns realized since 1964 have en-raged raisers to hold over more breeding animals but this increase has been modest e there is some question as to whether present price levels will be sustained.

Fur Marketing.—The bulk of the Canadian fur crop is marketed, raw or undresse through seven fur auction firms located in Montreal, North Bay, Winnipeg, Regi Edmonton and Vancouver. The marketing season extends from December each ye through to the following June, or until the crop has been sold. The furs are sold throu competitive bidding, by the fur auction firms, which charge a commission of, generall around 5 p.c. of the gross realization for their services. These services include classifyi the pelts and readying them for sale in "lots" which are matched as to size, colour a fur quality. The fur auctions advertise their scheduled sales widely in Canada, the Unit States and overseas.

Canadian furs are highly prized in world markets and buyers from many countri attend the auctions, purchasing for their own accounts or on behalf of firms anywhere the world. In 1969 the value of exports of raw Canadian furs amounted to over $33,000,0 and the most important customers were the United States ($14,700,000), the Unit Kingdom ($9,600,000), Switzerland ($3,400,000), West Germany ($2,500,000) and Ita ($1,200,000). The principal species exported were ranched mink ($13,600,000), beav ($8,600,000), seal ($2,500,000), muskrat ($1,900,000) and wild mink ($1,600,000).

Section 2.—Fur Statistics

Subsection 1.—Fur Production and Trade*

Total Fur Production.—Annual figures of raw fur production, available since 192 are now based on figures of royalties, export taxes, etc., provided by the game departmen of all provinces except Prince Edward Island; those for Prince Edward Island are based returns by fur dealers in that province.

Table 1 shows the fluctuating trend of the fur industry over the past two decad It should be mentioned that, from 1964 on, the figures include hair and fur seal pelts, whi in 1969 had a value of $2,409,251. The proportion of the total value of pelts sold from f farms declined to 55 p.c. in 1969, the lowest since 1955.

1.—Pelts of Fur Bearing Animals Produced and Percentage Sold from Fur Farms, Years Ended June 30, 1950-69

Year Ended June 30—	Pelts		Percentage of Value Sold from Fur Farms	Year Ended June 30—	Pelts		Percentage of Value Sold from Fur Farms
	Number	Value			Number	Value	
		$				$	
1950	7,377,491	23,184,033	34	1960	5,999,414	31,186,078	60
1951	7,479,272	31,134,400	36	1961	6,237,360	28,737,087	59
1952	7,931,742	24,215,061	42	1962	5,771,129	28,971,077	64
1953	7,568,865	23,349,680	43	1963	5,123,395	31,943,418	62
1954	6,274,727	19,287,522	49	1964[1]	4,572,594	35,412,822	63
1955	9,670,796	30,509,515	43	1965[1]	5,609,025	36,534,609	58
1956	7,727,264	28,051,746	56	1966[1]	5,507,199	45,622,852	63
1957	6,919,724	25,592,130	57	1967[1]	5,221,750	35,103,371	64
1958	6,440,319	26,335,109	60	1968[1]	6,093,598	36,531,035	63
1959	5,370,531	25,836,617	62	1969[1]	5,609,301	41,589,086	55

[1] Includes seal pelts.

Table 2 shows the provincial distribution of fur production. Ontario continues to lea the provinces and territories in this respect, accounting for 26.6 p.c. of the total value i the 1968-69 season compared with 22.3 p.c. in the previous season. Increased percentag were also shown by Newfoundland, Prince Edward Island, Nova Scotia, New Brunswic Quebec and Northwest Territories.

* Prepared by the Agriculture Division, Dominion Bureau of Statistics.

2.—Pelts of Fur Bearing Animals Produced, by Province, Years Ended June 30, 1968 and 1969

Province or Territory	1968			1969		
	Pelts	Value	Percentage of Total Value	Pelts	Value	Percentage of Total Value
	No.	$		No.	$	
foundland	76,802	495,590	1.4	148,464	1,106,504	2.7
e Edward Island	8,794	108,624	0.3	9,100	127,054	0.3
a Scotia	145,582	1,519,460	4.2	146,452	1,903,489	4.6
Brunswick	45,104	275,138	0.8	51,752	399,691	1.0
ec	432,941	3,860,476	10.6	461,759	4,778,302	11.5
rio	1,360,493	10,519,850	28.8	1,490,505	12,640,998	30.4
toba	839,669	4,706,085	12.9	747,802	5,414,400	13.0
atchewan	989,091	2,890,725	7.9	678,150	2,884,827	6.9
rta	1,095,302	4,243,408	11.7	856,117	4,360,056	10.5
sh Columbia	630,345	6,071,500	16.6	539,016	5,509,553	13.2
n Territory	56,683	87,585	0.2	54,300	104,612	0.3
hwest Territories	354,051	826,523	2.3	364,504	1,159,767	2.8
Canada[1]	**6,093,598**	**36,531,035**	**100.0**	**5,609,301**	**41,589,086**	**100.0**

[1] Totals include pelts and values not allocated to a province or territory, mainly Alaska fur seal and Atlantic t hair seal.

Wild Fur Production.—The principal kinds of wild fur pelts taken, according to ue, in 1968-69 were beaver, seal, muskrat and mink. These four kinds accounted for p.c. of the total value of wild pelts produced, beaver alone accounting for 43 p.c. The nber of beaver pelts produced was somewhat higher than in the previous year and the rage value per pelt increased from $15.05 to $18.40. In fact, the average value of ry kind of pelt except fox (not specified), marten, rabbit, skunk and squirrel, was higher 968-69 than in 1967-68.

3.—Pelts of Wildlife Fur Bearing Animals Taken, by Kind, Years Ended June 30, 1968 and 1969

Kind	1967-68 Fur Season			1968-69 Fur Season		
	Pelts	Total Value	Average Value	Pelts	Total Value	Average Value
	No.	$	$	No.	$	$
ger	1,251	8,109	6.48	1,215	15,204	12.51
r—						
hite	452	61,880	136.90	404	62,850	155.57
lack or brown	1,729	41,044	23.74	3,076	83,841	27.26
rizzly	90	6,401	71.12	6	459	76.50
ver	420,437	6,328,648	15.05	437,875	8,056,118	18.40
gar	23	709	30.83	—	—	—
ote or prairie wolf	17,366	116,171	6.69	33,067	447,052	13.52
hine (weasel)	141,915	119,874	0.85	106,009	107,472	1.01
her	5,535	68,676	12.41	7,627	142,414	18.67
—						
lue	108	1,412	13.07	68	1,229	18.07
ross and red	20,327	157,134	7.73	39,170	501,445	12.80
lver	302	5,131	16.99	532	10,882	20.45
hite	29,683	368,579	12.42	20,231	316,894	15.66
ot specified	13	159	12.23	50	532	10.64
x	15,848	466,712	29.45	20,677	644,296	31.16
ten	43,152	369,500	8.56	64,803	538,570	8.31
k	93,135	1,164,780	12.51	120,935	1,637,517	13.54
krat	1,825,896	1,661,582	0.91	1,754,393	2,339,330	1.33
er	15,818	322,674	20.40	16,868	455,045	26.98
bit	43,992	21,964	0.50	57,851	26,679	0.46
coon	27,636	109,805	3.97	47,835	301,234	6.30

3.—Pelts of Wildlife Fur Bearing Animals Taken, by Kind, Years Ended June 30, 1968 and 1969—concluded

Kind	1967-68 Fur Season			1968-69 Fur Season		
	Pelts	Total Value	Average Value	Pelts	Total Value	Averag Value
	No.	$	$	No.	$	$
Seal—						
Fur, North Pacific[1]	13,802	538,443	39.01	13,318	814,481	61
Hair	132,287	793,765	6.00	210,099	1,594,770	7
Skunk	175	89	0.51	199	91	0
Squirrel	1,251,191	699,710	0.56	958,710	435,367	0
Wildcat	2,483	23,448	9.44	3,266	66,243	20
Wolf	1,244	28,165	22.64	1,518	42,170	27
Wolverine	561	17,651	31.46	530	20,968	39
Totals	**4,106,451**	**13,502,215**	...	**3,920,332**	**18,663,153**	...

[1] Commonly known as Alaska fur seal; value figures are the net returns to the Federal Government for pe sold.

Fur Farm Production.—Mink accounts for about 99 p.c. of the total value of f farm production. In 1968 the number of mink pelts taken continued upward, reachi 1,668,000 with a value of $22,690,000. Mink farms decreased in number from 1,359 1,147 but the number of animals on those farms at year-end was 641,857 compared wi 650,929 a year earlier. Chinchilla farms increased in number from 937 to 1,395 and t number of animals from 72,952 to 83,033. In 1968, 26 farms raising nutria reported 1,0 animals and 40 farms raising fox had 1,069 animals.

4.—Fur Farms and Value of Pelts Produced Thereon, by Province, 1966-68

Province	Fur Farms at Year-End			Value of Pelts Produced on Fur Farms		
	1966	1967	1968	1966	1967[r]	1968
	No.	No.	No.	$'000	$'000	$'000
Newfoundland	24	19	17	441	234	184
Prince Edward Island	19	18	11	73	106	121
Nova Scotia	162	185	180	1,295	1,392	1,650
New Brunswick	35	35	32	111	142	164
Quebec	140	139	126	1,627	1,765	1,881
Ontario	723	832	993	6,919	7,166	7,735
Manitoba	190	171	184	3,382	3,105	2,831
Saskatchewan	121	198	272	1,397	1,339	1,078
Alberta	326	328	316	2,512	2,513	2,422
British Columbia	463	442	454	4,974	5,266	4,860
Totals	**2,203**	**2,367**	**2,585**	**22,731**[1]	**23,029**[1]	**22,926**

[1] Includes value of some pelts not allocated by province.

5.—Number and Value of Pelts Produced on Fur Farms, by Kind, 1966-68

Kind	1966		1967[r]		1968	
	Pelts	Value	Pelts	Value	Pelts	Value
	'000	$'000	'000	$'000	'000	$'000
Mink	1,811	22,472	1,967	22,789	1,668	22,690
Standard	*472*	*5,450*	*475*	*5,975*	*382*	*6,218*
Grey	*45*	*522*	*44*	*466*	*42*	*546*
Dark blue	*65*	*839*	*82*	*788*	*54*	*648*
Light blue	*292*	*4,501*	*343*	*4,708*	*374*	*5,039*
Brown	*685*	*7,597*	*714*	*7,214*	*527*	*6,770*
Beige	*195*	*2,821*	*231*	*2,904*	*231*	*2,872*
White	*57*	*742*	*78*	*736*	*58*	*595*
Chinchilla	19	227	17	193	19	188
Fox	1	30	1	44	1	47
Nutria	1	2	1	2	1	2
Totals	**1,832**	**22,731**	**1,987**	**23,029**	**1,689**	**22,926**

Exports and Imports.—The Canadian fur trade, both export and import, is mostly ndressed furs, the value of dressed and manufactured furs going out of or coming into ada being a comparatively small proportion of the total. Canadian fur exports consist ely of those produced in greatest abundance, mink being by far the most valuable wed by beaver, seal, fox, and muskrat. Mink, Persian lamb, dressed seal, dressed p and lamb, fox, and raccoon make up a large part of the imports. Exports and im- s of furs, undressed, dressed and manufactured, to and from Britain, the United States all countries, are given for the years 1968 and 1969 in Table 6.

6.—Exports and Imports of Furs, by Kind, 1968 and 1969

Kind of Fur	1968			1969		
	Britain	United States	All Countries	Britain	United States	All Countries
	Exports					
	$'000	$'000	$'000	$'000	$'000	$'000
ressed—						
aver	2,085	2,475	6,894	2,974	2,044	8,644
inchilla	—	274	274	—	255	255
mine or weasel	86	27	124	65	10	75
sher	32	25	76	36	99	164
x, all types	89	1,289	1,680	242	974	1,377
nx	19	199	241	47	329	429
arten	100	255	386	180	413	766
nk	2,152	13,839	19,453	1,981	9,712	15,203
uskrat	1,212	48	1,361	1,824	59	1,949
ter	12	70	207	15	115	287
abbit	—	22	22	—	7	8
al	716	25	1,283	1,519	18	2,534
uirrel	759	—	759	507	—	507
olf	30	78	130	95	167	287
her	108	111	335	165	524	892
ssed—						
nk	32	71	357	23	116	545
accoon	—	72	75	—	9	9
r plates, mats, etc	—	2	4	—	21	55
her	128	1,085	1,895	34	1,059	1,734
goods apparel	2,983	3,456	15,487	1,570	8,292	21,661
Totals	**10,543**	**23,423**	**51,043**	**11,277**	**24,223**	**57,381**
	Imports					
	$'000	$'000	$'000	$'000	$'000	$'000
ressed—						
nina and Jap mink	80	1	279	202	—	345
x	326	255	1,270	618	680	2,633
olinsky	27	22	185	49	14	107
ink	1,513	2,753	10,531	1,331	2,145	9,268
uskrat	—	548	548	2	2,154	2,202
ersian lamb	453	484	1,631	208	491	1,030
abbit	7	4	73	12	37	221
accoon	—	1,890	1,891	11	2,768	2,784
ther	286	1,282	2,808	203	1,870	3,877
ssed—						
atters' furs	33	303	477	16	414	624
ink	2	478	516	10	1,210	1,412
al	2	1,326	1,673	1	2,120	2,344
heep and lamb	564	467	1,947	623	385	1,882
r plates, mats, etc	214	437	1,207	444	273	1,652
ther	199	656	1,342	300	942	1,809
goods apparel	211	151	761	576	343	1,620
Totals	**3,917**	**11,057**	**27,139**	**4,606**	**15,846**	**33,810**

Subsection 2.—The Fur Processing Industry

The general term "fur processing" includes the fur dressing and dyeing industry a the fur goods industry. The former is concerned with the dressing or dyeing of pelts a custom basis and the latter is a manufacturing industry that makes up fur goods su as coats, scarves and gloves. Tables 7 and 8 give selected statistics for these industr on the "total activity" basis (see Chapter XVI on Manufactures) for 1964-68. In 19(the fur dressing and dyeing industry processed the following major types of pelts: mi (all types) 1,764,870, muskrat 942,443, raccoon 686,330 and fox 148,098. Comparat figures for 1967 were 1,771,111, 792,476, 531,844 and 108,470, respectively.

7.—Principal Statistics of the Fur Dressing and Dyeing Industry, 1964-68

Item		1964	1965	1966	1967	1968
Establishments	No.	16	17	15	18	1
Administrative and Other Salaried Employees—						
Male	No.	84	85	82	67	8
Female	"	23	25	22	22	2
Salaries paid	$'000	670	780	821	754	1,00
Production and Related Employees—						
Male	No.	641	689	612	488	51
Female	"	121	129	105	85	7
Wages paid	$'000	3,155	3,469	3,263	2,916	3,45
Cost of materials used in manufacturing	$'000	1,088	1,696	1,433	1,189	1,65
Pelts treated	'000	4,832	5,219	5,264	4,416	5,16
Amount received for treatment of furs and other manufacturing revenue	$'000	6,559	7,927	6,953	6,510	7,67

8.—Principal Statistics of the Fur Goods Industry, 1964-68

Item		1964	1965	1966	1967	1968
Establishments	No.	433	406	406	401	39
Administrative and Other Salaried Employees—						
Male	No.	448	465	422	403	37
Female	"	183	179	156	164	15
Salaries paid	$'000	3,493	3,506	3,516	3,611	3,62
Production and Related Employees—						
Male	No.	1,596	1,454	1,418	1,403	1,82
Female	"	804	727	699	673	85
Wages paid	$'000	9,578	9,552	9,624	10,183	14,37
Cost of materials used in manufacturing	$'000	39,661	41,218	42,186	41,948	43,85
Value of factory shipments and other manufacturing revenue	$'000	62,536	64,707	65,963	67,372	69,61
Total revenue	$'000	64,515	66,892	67,942	69,454	71,44

Section 3.—Provincial and Territorial Fur Resource Managemen

Most of the fur resources of the provinces and territories of Canada are under t administration of their respective governments. Exceptions include those resources with the boundaries of the national parks and the Indian reserves, which are under the admi stration of the Federal Government. The Canadian Wildlife Service of the Departme of Indian Affairs and Northern Development is responsible for all Federal Governme interests in wildlife resources except for those related to Indian affairs, which are admi stered by the Indian Affairs Branch of the same Department. The Canadian Wildl

* Prepared by the respective provincial and federal departments responsible for fur resource management.

h and vigorous approach ada's designers working any Canadian wild and ed furs is creating an new interest in fur fash- though fur craftsmanship da has always ranked with t. The centre coat—a midi with raccoon collar trim—is flanked on the a Canada Majestic violet h wide notched collar and nink hem, and on the right nada Majestic triple-pearl th waist trim and jewelled buttons.

vice co-operates with provincial governments and other agencies concerned and handles eral interests in relevant national and international problems (see pp. 56-58). Provincial resource management practices are discussed in the following paragraphs.

Newfoundland.—The wild fur industry in Newfoundland, as elsewhere, has been racterized by short-term instability and long-term decline. In general, the price of furs declined in the past decade and, since the supply of trappers is partially determined by profit motive, the number of trappers has also declined. As a result, the fur bearers of province are now considered to be under-harvested. Because trapping is no longer fitable for the casual trapper and only large harvests and excellent pelt preparation can y a trapper for his effort, the maintenance of trapping in Newfoundland requires that resource be divided among a select group of professional trappers.

Research and management of the Newfoundland wild fur industry is at present in gress in an effort to exploit this resource more fully. All beaver were harvested on the nd in the 1970 season under registered trapline management, which allows one beaver e taken from each active lodge; in Labrador the quota is 20 beaver per trapper. There o quota for other furbearers. More than $100,000 worth of wild fur was harvested in 9, about half of which was for beaver. Otter and fox were the next largest contributors, about $30,000 and $25,000, respectively. A harvest of about 3,000 beaver and 1,000 r has been stable for the past several years.

Nova Scotia.—Nova Scotia's wild furbearers include beaver, muskrat, mink, otter, dcat, lynx, fox, raccoon and weasel and the trapping of these animals provides supple- ntary income for some 3,500 persons who harvest from $100,000 to $200,000 worth of l furs each year. The value, of course, depends on the numbers of each fur species ilable and on fur prices, both of which are subject to marked variations.

The beaver, once almost extinct in the province, is now the most valuable fur bea taken. A $2 licence is required by residents to trap a limited number of beavers (five to 2 between Nov. 1 and Jan. 15. No licence is required to trap other fur bearers, althoug royalty must be paid to the province for each pelt of mink, otter, beaver, lynx and musk exported. These animals may be taken between Nov. 1 and Mar. 15 (depending species).

To increase knowledge of the beaver as a preparation for better management of population, behaviour, feeding, movement and reproduction, studies are being conduct in the Tobeatic Wildlife Management Area in western Nova Scotia and in Thomson Stati Sanctuary in Cumberland County (northeastern mainland Nova Scotia). In additi data on reproduction, size, age, parasites and disease are collected from beavers harvest by trappers in all parts of the province.

The Trappers' Association of Nova Scotia, including several county trappers' assoc tions as well as trappers from all parts of the province, has been organized so that the m closest to the fur resource may have a say in its wise use and management. One of the ai of the Association is to promote improved handling and marketing of the raw furs taken trappers so as to upgrade over-all fur quality and thus command more profitable mark prices for trappers.

New Brunswick.—In New Brunswick, the harvest of wild fur bearing animals carried out mainly by persons who trap only on a part-time basis. Between 3,000 a 4,000 residents of the province annually supplement their incomes by trapping for beav bobcat, fisher, fox, marten, mink, muskrat, otter, raccoon, skunk, snowshoe hare, squi and weasel. However, beaver and muskrat are the two most important species.

During the early 1900s, beavers became scarce in New Brunswick but, as a result protection, they rapidly increased in numbers. The first open season in over 20 years v declared in 1944 and there has been an open season on beaver every year since 1953, annual catch ranging from 7,000 to 10,000 pelts. There is no limit on beaver. In fa damage caused by these animals to farm land, woodlots, highways and railways is of c cern. The reproductive performance of the beaver is currently under investigation New Brunswick.

Investigations are also continuing into the ecology of the muskrat, about 24,000 which are harvested each year. The trapping of fisher and marten was permitted dur the 1964-65 trapping season for the first time since 1946 and up to 1969-70 about 150 fis and 200 marten have been taken each year. These animals, found mainly in the north part of the province, appear to be increasing in number and their range is extending sou ward. During the winters of 1966, 1967 and 1968, a number of fisher were live-trapped released in the Fundy Mountains in the southeastern part of the province in an attempt re-establish them there. Mink and otter are not abundant in New Brunswick but dur the fall trapping season the catches range from 1,000 to 1,800 for mink and from 200 350 for otter.

Provincial legislation allows for changes in the trapping seasons to be made on sh notice. Thus, the seasons may be manipulated to allow for the most efficient and practi utilization of the fur resources of the province.

Quebec.—The fur trade has been of considerable importance to Quebec since earliest days of New France and the province still ranks among Canada's prime fur p ducers. At present, the most important native species, in order of value, are beav Arctic fox, muskrat, mink, lynx, seal, otter and marten.

Wild fur management began in 1932 when a Hudson's Bay Company factor lease private reserve at Rupert House. The Company took over administration of this rese and a second, at Nottoway House, was leased by the Company in 1938. Strict conservat measures were enforced within the two reserves and proved so successful that the provin government took over their administration and later set aside other Crown lands for

clusive use of Indian trappers. Ten reserves are now under conservation: Rupert House, 375 sq. miles; Nottoway, 11,700 sq. miles; Vieux Comptoir, 19,525 sq. miles; Fort Georges, ,150 sq. miles; Abitibi, 30,475 sq. miles; Great Victoria Lake, 7,825 sq. miles; Mistassini, ,300 sq. miles; Roberval, 26,925 sq. miles; Bersimis, 31,925 sq. miles; and Saguenay, ,600 sq. miles.

A separate system of registered lands for white trappers is in force in the area of Abitibi ast, Abitibi West, Rouyn–Noranda, Témiscamingue, Pontiac and part of Saguenay unty. Each leaseholder has exclusive trapping rights on his lands and is subject to very ict regulation. Trapping of fur bearing animals other than beaver is not restricted either the reserves or on registered lands, except that the general regulations dealing with otection of animals or limits on catches must be complied with. Biological studies have en undertaken recently to evaluate the results of this system.

In 1968-69, the value of wild furs to the trapper was close to $3,000,000 which, of urse, was only a fraction of the value of the finished product.

Ontario.—Legislation for the management of wild fur bearers had its beginning in ntario with the setting of seasons in 1860 by an Act of Upper Canada. However, 32 ars passed before there was any field staff to enforce the regulations and then began an of restrictive legislation to protect species threatened by the earlier exploitation. ogress beyond the restrictive enforcement of open and closed seasons has come about ly in the past 20 or 30 years. The first steps in this direction involved the setting aside special Indian hunting areas in which non-Indians were not allowed to trap.

The registered trapline system was introduced in 1935 on a very small scale. This stem is based on government recognition of the desirability of full utilization of the source and the more efficient management that results when one individual enjoys the clusive right to trap on such an area. In its early stages, surveyed townships were as- gned as trapline areas but more explicit trapline boundaries, established in 1947-48, now ver the province and mostly follow natural physiographical features. At the same time, sident traplines were established in areas of patented land, which means most of southern ntario; these are blocks of land on which trappers are licensed to trap, providing they ake their own written agreements with the landowners. Trapline licences are renewable nually as long as the trapper meets the conditions of the regulations and continues to ap. Trappers may sell the equipment and improvements they have made on their lines d thus have a vested interest in their traplines.

In full realization that fur is a natural resource that cannot in nature be stockpiled, d is harvested on a commercial basis only, the Ontario Department of Lands and Forests s assisted the Ontario Trappers' Association to establish their fur auction at North Bay. his allows the trappers to sell furs on a competitive market and realize their full value.

Beaver continue to provide the greater part of the earnings from wild furs for Ontario's 00 trappers. During the 1968-69 season, 162,000 beaver pelts at an estimated value of ,866,000 were marketed by trappers; the total estimated value of all wild furs harvested the province was $4,906,000.

Manitoba.—Trapping and trading in furs is Manitoba's oldest industry and the ovince still produces some of the finest wild pelts in the world, the annual value of which erages about $1,900,000. The industry continues to be of particular economic importance the full-time white and native trappers in the northern areas and also for many part-time ppers in the southern part of the province.

When registered traplines were established nearly 30 years ago, indiscriminate trapping s all but eliminated and illegal trapping was sharply reduced, thus giving protection to th the animals and the trapline operators. The Department of Mines and Natural sources, which administers the fur resources of the province, has been striving by area organization to enlarge traplines so that the trappers may earn more money to compen- te for the rising cost of living. The use of snowmobiles has made it possible for them to

cover lines more thoroughly and in less time, permitting them to handle larger territor
The once-scarce beaver has been rehabilitated through years of controlled and mana
harvest and is now the most valuable fur bearer taken but during the past decade new r
ords in the production of muskrat, mink, lynx, fisher and otter have been establish
A live-transplant project has been undertaken to re-stock areas where the marten has beco
depleted.

A trapper education program was started by the Department in 1958 to improve
general handling of furs and to achieve a certain measure of standardization in pelt ca
This program has shown gratifying results and has been expanded to include improv
trapping methods and the use of humane traps. A booklet, *The Manitoba Trappers' Gu*
is available from the Conservation Education Branch of the Department.

Manitoba works in close co-operation with federal and other provincial agencies in
promotion of quality furs by exhibiting collections of representative wild furs at Europe
fairs. A Winnipeg fur auction company, one of the largest in Western Canada, serves
an important fur selling and exporting agency for Manitoba trappers and fur dealers, w
buyers attending from a number of European fur centres, from the United States and fr
Eastern Canada.

Saskatchewan.—Before 1945, little was done to control the trapping of beaver a
muskrat in Saskatchewan, other than to establish closed seasons when the fur bear
became depleted from over-trapping, and the lack of a conservation and managem
policy had a disastrous effect on both the fur resources and the livelihood of trapp
In 1944, the provincial government set up a committee to study trapping problems a
the following year the South Saskatchewan Muskrat Trapping Program was institut
Under this plan, individuals received exclusive rights to trap on definite land locatio
Owners and occupants received first consideration, with special priority given to Indi
and metis on Crown lands. Muskrat quotas were established to assure continuing popu
tions, and marketing of pelts under government supervision was instituted.

In 1946, under federal-provincial agreement, all Crown lands north of the 53rd para
were set up as the Northern Fur Conservation Block. Up to $50,000 a year was to
expended over the following ten years to establish and administer conservation are
purchase equipment, pay salaries of personnel, transplant live beaver and build dar
the Federal Government agreed to assume 60 p.c. of the cost and the province the
mainder. A Fur Advisory Committee, with representation from the provincial Depa
ment of Natural Resources and the federal Indian Affairs Branch, was set up to superv
the program. Organization of conservation areas was left to the trappers. Five-m
councils were elected in all districts, with Indian, metis and white trappers sharing pri
leges, obligations and responsibilities on an equal basis. Conservation measures a
licensing regulations were initiated. In 1956, the agreement was extended for another
years with minor changes and in 1962 a co-ordinating body was set up by the Fur Advis
Committee to promote better communications and understanding of the fur progra
In 1966, the agreement was again extended until 1972 and the sharable amount was la
raised to $120,000. The northern fur conservation program in Saskatchewan has serv
as an important vehicle to encourage these people to plan and carry out other progra
vital to their own well-being.

During the two decades of the province's fur program, security of trappers has be
strengthened; fur bearer population has reached a higher general level, particularly
beaver; quotas have put trapping on a sustained-yield basis; poaching has been alm
eliminated; higher water levels resulting from the comeback of beaver have improved
habitat for other wildlife; and Indian, metis and white trappers are sharing alike in
self-government of trapping areas and in fur management programs.

Alberta.—Plans have been formulated for the reorganization of the Fish and Wild
Division of the provincial Department of Lands and Forests. Under the new set-up, a
management section will be established to work strictly on the fur resources of the provin

More meetings will be held with registered trappers to increase the exchange of information between them and the Division's officers and a more intensive program is being initiated to eliminate as far as possible the misuse of trapping areas by certain trappers and, by amalgamation, to form trapping areas into better economic units. The Alberta Government submits pelts to the main fur exhibits in Canada and Europe, a policy that has increased the interest of foreign and Canadian buyers in Alberta furs.

British Columbia.—The British Columbia wild fur resource is administered by the Fish and Wildlife Branch of the Department of Recreation and Conservation. Regulations are derived under authority of the Wildlife Act and resource use is controlled under the registered trapline system, in effect since 1926. Registered traplines are areas of Crown land allotted, for the purpose of trapping wild fur, to trappers who are resident in the province. Registration of a specific trapline is renewable on an annual basis by the trapper, subject to certain requirements of tenure aimed at conservation and sustained yield of fur species. Approximately 3,000 trappers are involved in provincial wild fur production, of whom one half are Indians. The market value of wild fur produced during the fur harvest of 1968-69 was $649,969, with beaver, marten, squirrel and mink together comprising about 78 p.c. of the total value.

CHAPTER XIV.—MINES AND MINERALS

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

Section 1.—Canada's Mineral Industry*

The Canadian mineral industry experienced a very successful and progressive year 1969 notwithstanding a pause in the average increase of production value recorded fr 1960 to 1968 of over 8 p.c. a year. Exploration for new deposits of base metals, uraniu coal, oil and gas continued unabated in widespread areas, as did the further exploration mineral occurrences previously recorded. Development of properties for production 1970 and in succeeding years continued at a high rate and future development of ma others was apparent as a result of a large number of production and marketing apprais undertaken. Despite the pause in the high growth rate of Canada's value of mineral o put in 1969, which was primarily the result of labour disputes in the iron ore and nick copper industries, the mineral and mineral processing industries remained strong a buoyant and continued to successfully compete for markets in the world's major consum areas.

The value of Canada's mineral production in 1969, according to preliminary statist was $4,690,642,200, down slightly from the all-time record of $4,725,341,147 in 1968. H not long strikes occurred in some major mineral commodity industries, the year's mine production growth rate would have reached the average of nearly 8.4 p.c. a year fr 1960-68 and exceeded it because of increased prices for most commodities and the continu high rate of industrial activity in Canada's main marketing areas.

Canada produces about 60 different minerals from domestic deposits. The 10 lead minerals in 1969 contributed 79.1 p.c. of the total value of mineral output and were wo $3,708,600,000. The 20 leading minerals of the 60 produced in Canada regularly c tribute nearly 95 p.c. of the total value; in 1969 they contributed 95.1 p.c. The lead minerals were, with 1968 output shown in brackets: petroleum, $1,010,200,0 ($937,300,000); copper, $574,200,000 ($607,900,000); nickel, $482,400,000 ($528,200,0

* Prepared under the direction of J. Austin, Deputy Minister of the Department of Energy, Mines and Resou Ottawa, in the Minerals and Metals Division, Mineral Resources Branch. The statistics in the tables throug the Chapter were compiled in the Industry Division of the Dominion Bureau of Statistics.

The Brenda copper-molybdenum mine, not far from Kelowna, is the largest of three new British Columbia copper mines to come into production in 1970. The crushing and concentrating plant is equipped to handle 24,000 tons of open-pit ore a day.

George Hunter

Indusmin's new silica processing plant at Midland, Ont., began operations in 1970. Feed for the mill comes from an extensive deposit of high-grade silica some 120 miles north of the plant and its output of 500,000 tons of product a year will be used in the glass, ceramics and chemicals industry.

on ore, $431,900,000 ($532,700,000); zinc, $364,400,000 ($326,900,000); natural gas, 63,600,000 ($225,300,000); asbestos, $196,800,000 ($185,000,000); cement, $171,300,000 152,000,000); sand and gravel, $130,600,000 ($129,500,000); and silver, $83,200,000 104,100,000).

There is varied distribution of mineral production in most regions of Canada. Except r a few mineral commodity requirements, such as manganese, chromium, bauxite and tin, nada produces nearly all of its mineral requirements and has substantial reserves to meet e ever-increasing domestic demand and to maintain its high rate of mineral and mineral-sed exports. It leads the world in the production of asbestos, nickel, zinc and silver, is cond in molybdenum, titanium concentrates, gypsum, uranium and potash, and stands gh in the production of many other major minerals including copper, lead, iron ore, gold, atinum metals and cobalt.

The mineral industry has always been dependent, in large measure, for its well-being d growth on exports, about 60 p.c. of its output to the prime processing stage being ex-orted. It is the country's leading resource-based industry and exports of minerals and bricated mineral products have led all export sectors for many years. Exports of minerals d fabricated mineral products in 1969 were valued at $3,913,078,000 compared with ,992,878,000 in 1968 and $3,348,708,000 in 1967; they accounted for 27 p.c. of Canada's tal commodity exports. About 60 p.c. went to the United States, 12 p.c. to Britain, 8 p.c. Japan, and 9 p.c. to countries of the European Common Market; the remainder was ipped to many countries throughout the world as this category of exports goes to some countries in all.

As a result of a continuing high rate of industrial production in the major markets of e world, the demand for higher amounts of minerals and metals remained strong and owing in 1969, with prices generally firmer. Industrial growth was particularly strong Japan and West Germany and at moderately good rates in the United States and Canada; e same general trends are expected to continue in 1970. Britain, in recent years, has ot experienced the same high rates of industrial activity as have the aforementioned arket areas for Canada's minerals and mineral products but an improvement was apparent 1969 that will probably continue. From 60 to 65 p.c. of Canadian production of crude inerals is exported, most of it to the United States, Britain, Japan and West Germany. herefore, the well-being of the country's mineral industry is dependent largely on Canada's mpetitive position in those markets relative to the position of other export-oriented ineral-producing countries.

Prices of minerals and metals in 1969 were generally higher with only a few exceptions, otably elemental sulphur, silver and potash, each of which was lower because of oversupply. he supplies of most major non-ferrous metals were tight throughout the year and there ere increased prices for copper, nickel, lead, zinc, aluminum, tin and platinum, the largest ercentage increase being for copper. Iron ore prices remained the same, generally, roughout the year, the level having remained stable for several years, particularly in orth American markets. Iron ore has been in an oversupply situation for some time but the last quarter of 1969 there was evidence of a firming in prices that may indicate the nergence of a seller's market. Substantial price advances occurred for many of the alloy-g, additive, reactive and less common metals in 1969. Notable price advances took place r columbium, cobalt, chromium, molybdenum, titanium, vanadium, tungsten and rconium and for many metals recovered as byproducts of base metal smelting and refining, ich as selenium, tellurium, bismuth and the platinum group metals. The unit value of anium production in Canada was again lower, even though there was a modest increase in oduction.

Of the industrial minerals group, both potash and sulphur continued in oversupply and rices tended to be lower, although the volume of production of each was higher in 1969. sbestos remained in strong demand and prices were steady with further increases imminent s the year closed.

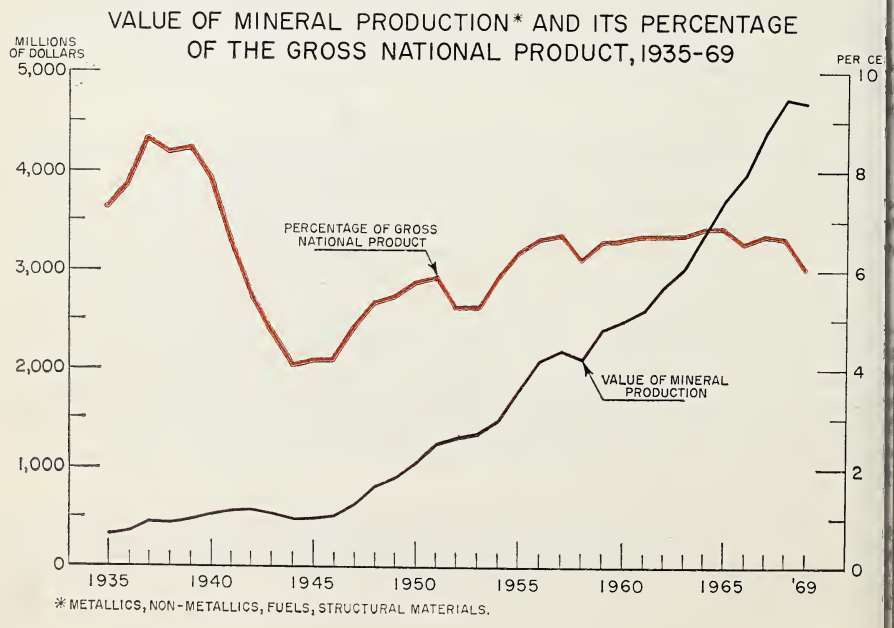
1.—Value of Mineral Production, 1886-1969

Year	Total Value	Value per Capita	Year	Total Value	Value per Capita	Year	Total Value	Val pe Cap
	$	$		$	$		$	$
1886.....	10,221,255	2.23	1935.....	312,344,457	28.84	1961r....	2,602,767,477	142
1890.....	16,763,353	3.51	1940.....	529,825,035	46.55	1962r....	2,840,299,299	152
1895.....	20,505,917	4.08	1945.....	498,755,181	41.31	1963r....	3,026,880,313	159
1900.....	64,420,877	12.15	1950[1]....	1,045,450,073	76.24	1964r....	3,364,929,279	174
1905.....	69,078,999	11.51	1955.....	1,795,310,796	114.37	1965r....	3,714,467,571	189
1910.....	106,823,623	15.29	1956.....	2,084,905,554	129.65	1966r....	3,980,304,565	198
1915.....	137,109,171	17.18	1957.....	2,190,322,392	131.87	1967.....	4,406,356,883	215
1920.....	227,859,665	26.63	1958.....	2,100,739,038	122.99	1968.....	4,725,341,147	227
1925.....	226,583,333	24.38	1959.....	2,409,020,511	137.79	1969p....	4,690,642,200	222
1930.....	279,873,578	27.42	1960.....	2,492,509,981	139.48			

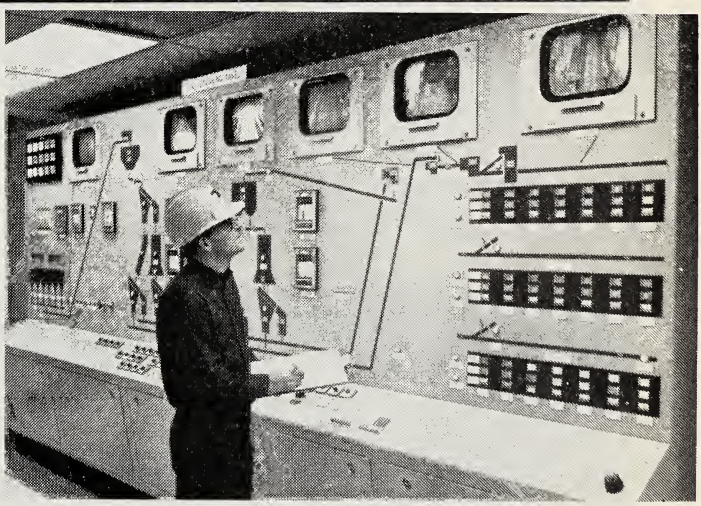
[1] Value of Newfoundland production included from 1949.

Following the United States and the Soviet Union, Canada is the world's larg producer of diversified mineral products and leads the world in mineral exports. Miner have always had a prominent role in the country's total economic growth and developme both economically and geographically. This has been particularly so since World War and especially so since 1950 when the value of mineral production was 5.8 p.c. of the gr national product (GNP) compared with 6.7 p.c. of $65,700,000,000 1967; it declined to 6.6 p.c. of $71,400,000,000 in 1968 and to about 6.0 p.c. of $78,500,000,0 in 1969 largely because of lost production due to strike action at major mining and mine processing operations.

Copper was again the leading mineral of the metallics group in 1969 although its produ tion, both mined and refined, was lower than in 1968 because of losses incurred throu labour stoppages. Mines were brought to production in several countries and many we being explored and developed for production at widely scattered locations throughout t world. The rate of discovery and development of copper deposits in Canada exceeds t



nt technical revolution in d associated industries has the concept and size of as well as management techniques.



ore-loading facilities, the the world, are in operation s, Que., where ore from the abrador iron mines is loaded e of 15,000 tons an hour.

anel of a modern concen- ant where the computer is placing the slide rule.

sses incurred through mine closures and new production is scheduled from five provinces d the Yukon Territory. The outstanding feature of the Canadian copper industry in cent years has been the development to production and the continuing discovery of large, w-grade copper and copper-molybdenum deposits in British Columbia and the possibility a similar pattern in the Yukon Territory. Also, substantial tonnages are being found in ng-established mining areas and in the more remote and unexplored areas of Ontario, uebec and Manitoba.

Nickel production was curtailed in 1969 because of the prolonged strikes at the Ontario erations of The International Nickel Company of Canada, Limited (Inco) and Falcon- idge Nickel Mines Limited, that shut off nearly 77 p.c. of Canada's production capacity. was, however, second in value to copper among the metallics, replacing iron ore which so suffered severe production losses because of long strikes in Quebec, Labrador and

Ontario mines. Iron ore production declined from 47,400,000 tons in 1968 to 40,000,0 tons and in value from $532,700,000 to $431,900,000, declines of 15.6 p.c. and 18.9 p. respectively. There was evidence late in the year of a firming trend in iron ore prices North American and European markets, particularly for good grade ores and especially f pellets and high grade concentrates with special properties. The iron ore situation appea to be changing from the one of abundance and oversupply that has been prevalent for sever years to one of balanced supply and demand or perhaps one of shortage for preferred typ

Zinc recorded new highs in 1969 in quantity produced and value and Canada was aga the world's leading mine producer. Production was 1,196,291 tons valued at $364,400,0 compared with 1,159,392 tons valued at $326,900,000 in 1968, the previous record f Canadian mine production of zinc. The value of lead production at $95,400,000, compar with $91,400,000 in 1968, was higher although production was lower at 315,032 tons co pared with 340,171 tons. The value of production in 1969 was higher for bismuth, ca mium, columbium, magnesium, mercury, molybdenum, and tellurium; value was lower f antimony, cobalt, the platinum group, silver, uranium and yttrium.

The production value of industrial minerals increased to $908,300,000 in 1969 fro $890,200,000 in the previous year; non-metallics declined slightly in value to $447,100,0 and structural materials increased to $461,200,000 from $443,300,000. The industri minerals sector is an important part of Canada's total mineral economy with output near doubling since 1960 and rising at about 8 p.c. a year since 1950. The five leading no metallics in 1969 were asbestos, potash, elemental sulphur, salt and titanium-dioxide; oth leading non-metallics included gypsum, sulphur in smelter gases, peat moss and sodiu sulphate. Potash and elemental sulphur, recovered in the processing of sour natural g each increased production capacities in Saskatchewan and Alberta, respectively, but ea suffered severely by conditions of oversupply and consequent lower prices in export marke It will probably be well into the 1970s before conditions begin to improve for either co modity. Asbestos and titanium-dioxide for pigments are also primarily export-oriented f their continued well-being but their markets remained strong at improved prices. Mo of the other non-metallics are dependent mainly on the domestic market and most of the recorded slightly increased production. Structural materials, consisting of clay produc cement, lime, sand and gravel, and crushed stone, are used almost entirely by the domes construction industry and their output is therefore related directly to the rate of activi in that industry.

High school and u versity students wo as miner-trainees bel ground at Elliot Lak Ont. Efficient oper tion of today's compl mining equipment r quires highly skill personnel.

The value of production of mineral fuels—coal, natural gas, natural gas byproducts, d crude petroleum—attained another record of $1,461,400,000 from the previous year's ord of $1,342,500,000. Crude petroleum output, at $1,010,200,000, exceeded the ,000,000,000-mark for the first time. Natural gas output increased substantially and at of natural gas byproducts (liquids) rose moderately; coal production declined slightly th in tonnage and value. Many significant developments occurred in the energy minerals ctor of the industry that will have long-lasting influences on future production. They re varied in nature and related to both industrial and governmental matters on national d international questions including the method by which the mineral commodities can be st economically moved to markets. In 1969, Western Canada was on its way to be- ming a substantial supplier of metallurgical coal to Japanese markets from large deposits ing developed for production in 1970 and in subsequent years.

2.—Value of Mineral Production, by Class, 1960-69

Year	Metallics	Non-metallics	Fuels	Structural Materials	Total
	$	$	$	$	$
60	1,406,558,061	197,505,783	565,851,829	322,594,308	2,492,509,981
61	1,387,159,036	210,467,786	673,794,892 r	331,345,763	2,602,767,477 r
62	1,496,433,950	217,453,009	770,245,507 r	356,166,833	2,840,299,299 r
63	1,509,536,931	253,452,413	884,879,853 r	379,011,116	3,026,880,313 r
64	1,701,648,538	287,497,000	972,725,417 r	403,058,324	3,364,929,279 r
65	1,907,575,899	327,238,901	1,045,490,867 r	434,161,904	3,714,467,571 r
66	1,984,672,572	363,387,717	1,151,594,654 r	480,649,622 r	3,980,304,565 r
67	2,285,279,477	406,269,252	1,260,147,793	454,660,361	4,406,356,883
68	2,492,599,647	446,922,191	1,342,549,863	443,269,446	4,725,341,147
69p	2,320,947,545	447,088,679	1,461,399,937	461,206,039	4,690,642,200

Capital and repair expenditure for the mining industry was $1,448,000,000, up slightly om that of $1,411,000,000 in 1968; the forecast expenditure for 1970 is $1,562,000,000.

The volume of mineral production index, which measures the mining industry's solute growth (1961=100), declined 1.8 p.c. in 1969 to 149.9 from 152.7 in 1968; the 960-69 average annual rate of growth was 4.8 p.c. In comparison, the volume index of tal industrial production increased 5 p.c. to 167.9 from 159.8 in 1968 and the average nnual rate of growth in the period 1960-69 was 6.3 p.c.

3.—Quantity Indexes of Production of the Principal Mining Industries, 1960-69
(1961=100)

Mining Industry	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
etal Mines	**107.3**	**100.0**	**101.1**	**103.9**	**120.6**	**124.5**	**125.0**	**133.8**	**142.6**	**126.9**
Gold, placer and quartz	104.4	100.0	92.6	88.8	85.3	79.2	71.8	65.4	58.8	52.4
Iron	103.6	100.0	142.4	173.0	229.5	242.6	261.1	276.1	311.4	267.7
Miscellaneous	108.5	100.0	99.5	98.6	121.5	135.5	135.8	122.0	129.0	116.3
on-metal Mines (except coal)	**91.5**	**100.0**	**109.3**	**121.9**	**138.7**	**161.8**	**179.2**	**192.8**	**196.1**	**221.6**
Asbestos	90.3	100.0	103.4	109.2	118.9	123.4	134.7	130.6	124.9	138.0
ineral Fuels	**87.1**	**100.0**	**111.3**	**119.1**	**128.3**	**135.2**	**145.6**	**158.0**	**164.3**	**180.0**
Coal	107.0	100.0	97.2	103.7	108.9	108.6	105.9	106.2	96.6	93.3
Crude petroleum and natural gas	85.7	100.0	113.7	121.7	131.7	139.8	152.5	166.9	176.1	195.0
Totals, Mines (incl. Milling), Quarries and Oil Wells	**97.4**	**100.0**	**104.8**	**110.6**	**124.9**	**131.6**	**136.5**	**145.2**	**152.7**	**149.9**

4.—Quantity and Value of Mineral Production, 1968 and 1969

Mineral		1968		1969P	
		Quantity	Value	Quantity	Value
			$		$
Metallics	...	...	**2,492,599,647**	...	**2,320,947,545**
Antimony	lb.	1,159,960	614,779	845,000	507,000
Bismuth	"	648,232	2,457,594	720,698	3,260,190
Cadmium	"	5,014,965	14,292,650	4,368,405	15,010,185
Calcium	"	468,512	450,946	888,361	925,831
Cobalt	"	4,029,549	8,687,652	3,203,947	6,921,780
Columbium (Cb_2O_5)	"	2,181,304	2,036,315	3,010,356	2,925,698
Copper	"	1,266,625,187	607,944,415	1,116,455,909	574,193,275
Gold	oz.t.	2,743,021	103,439,321	2,502,169	94,331,773
Indium		..	..	..	..
Iron ore	ton	47,443,303	532,694,110	40,000,640	431,930,310
Iron, remelt		..	22,022,849	..	23,475,000
Lead	lb.	680,350,911	91,439,162	630,063,880	95,391,671
Magnesium	"	19,856,937	6,181,992	20,969,620	7,093,714
Mercury		..	..	..	..
Molybdenum	lb.	22,464,273	37,317,958	30,291,644	52,623,117
Nickel	"	528,716,212	528,235,798	426,650,432	482,412,858
Platinum group	oz.t.	485,891	46,199,718	266,100	26,449,000
Selenium	lb.	635,510	3,082,223	710,618	4,375,563
Silver	oz.t.	45,012,797	104,114,599	43,092,976	83,169,443
Tellurium	lb.	70,991	458,602	103,777	671,588
Thorium (ThO_2)	"	139,191	261,836	29,014	55,127
Tin	"	358,191	497,885	268,000	493,120
Tungsten (WO_3)		..	..	..	..
Uranium (U_3O_8)	lb.	7,402,196	52,284,580	7,709,547	49,665,506
Yttrium (Y_2O_3)	"	113,330	936,067	86,127	675,540
Zinc	"	2,318,784,367	326,948,596	2,392,581,968	364,390,237
Non-metallics	...	...	**446,922,191**	...	**447,088,679**
Arsenious oxide	lb.	689,004	48,527	700,000	50,000
Asbestos	ton	1,595,951	185,024,662	1,596,450	196,759,000
Barite	"	138,059	1,262,687	141,392	1,419,568
Diatomite	"	521	17,159	487	11,340
Feldspar	"	10,620	243,678	11,743	309,123
Fluorspar		..	2,603,347	..	3,036,470
Gem stones	lb.	55,015	114,670	45,000	107,500
Gypsum	ton	5,926,940	11,825,382	6,871,971	13,433,102
Helium		..	..	..	..
Magnesitic dolomite and brucite		..	3,045,984	..	3,000,000
Nepheline syenite	ton	426,595	4,738,008	502,893	5,881,818
Nitrogen		..	..	..	..
Peat moss	ton	293,628	8,658,194	314,100	8,717,000
Potash (K_2O)	"	2,917,611	65,121,399	3,146,160	67,119,877
Pyrite, pyrrhotite	"	314,197	2,286,442	323,432	2,111,198
Quartz	"	2,554,565	5,703,746	2,263,594	5,853,623
Salt	"	4,864,324	31,170,092	4,247,170	29,424,420
Soapstone, talc, pyrophyllite	"	80,589	1,080,654	81,427	1,191,213
Sodium sulphate	"	459,669	7,082,575	508,484	8,388,717
Sulphur, in smelter gas	"	666,370	8,915,202	550,804	8,221,795
Sulphur, elemental	"	2,580,746	79,963,600	2,984,937	62,986,315
Titanium dioxide, etc.		..	28,016,183	..	29,066,600
Fuels	...	...	**1,342,549,863**	...	**1,461,399,937**
Coal	ton	10,980,850	53,935,893	10,635,098	52,038,954
Natural gas	Mcf.	1,692,300,787	225,268,658	1,985,280,751	263,564,593
Natural gas byproducts	bbl.	58,613,102	126,057,696	66,106,853	135,566,258
Petroleum, crude	"	379,396,276	937,287,616	407,498,677	1,010,230,132
Structural Materials	...	...	**443,269,446**	...	**461,206,039**
Clay products		...	48,721,444	...	50,995,351
Cement	ton	8,165,805	152,003,739	8,543,622	171,257,887
Lime	"	1,439,967	17,385,635	1,718,155	20,108,301
Sand and gravel	"	205,234,509	129,500,553	204,060,000	130,650,000
Stone	"	75,939,767	95,658,075	70,069,100	88,194,500
Grand Totals		...	**4,725,341,147**	...	**4,690,642,200**

5.—Percentage of the Total Value Contributed by Principal Minerals, 1960-69

Mineral	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
etallics[1]	**56.5**	**53.7**	**52.5**	**49.5**	**50.2**	**50.9**	**50.0**	**51.9**	**52.7**	**49.5**
Copper	10.6	9.9	9.9	9.3	9.6	10.2	11.4	13.2	12.9	12.2
Gold	6.3	6.1	5.5	5.0	4.3	3.6	3.2	2.6	2.2	2.0
Iron ore	7.0	7.3	9.2	10.3	11.9	11.0	10.9	10.7	11.3	9.2
Lead	1.8	1.8	1.5	1.5	1.6	2.4	2.3	2.0	1.9	2.0
Molybdenum	0.4	0.4	0.4	0.4	0.6	0.5	0.9	0.9	0.8	1.1
Nickel	11.9	13.6	13.5	11.8	11.2	11.5	9.5	10.5	11.2	10.3
Platinum group	1.2	0.9	1.0	0.7	0.7	1.0	0.8	0.8	1.0	0.6
Silver	1.2	1.1	1.2	1.4	1.2	1.2	1.2	1.4	2.2	1.8
Uranium	10.8	7.6	5.5	4.5	2.5	1.7	1.4	1.2	1.1	1.1
Zinc	4.4	4.1	3.9	4.0	5.7	6.6	7.3	7.3	6.9	7.8
on-metallics[1]	**7.9**	**8.2**	**7.6**	**8.3**	**8.4**	**8.7**	**9.1**	**9.2**	**9.5**	**9.5**
Asbestos	4.9	5.0	4.6	4.5	4.3	3.9	4.1	3.8	3.9	4.2
Gypsum	0.4	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3
Nepheline syenite	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Potash	--	—	0.1	0.7	0.9	1.5	1.6	1.5	1.4	1.4
Quartz	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Salt	0.8	0.8	0.8	0.7	0.6	0.6	0.6	0.6	0.7	0.6
Sodium sulphate	0.1	0.2	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.2
Sulphur, in smelter gas	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
Sulphur, elemental	0.2	0.3	0.3	0.4	0.6	0.7	1.0	1.6	1.7	1.3
Titanium dioxide, etc.	0.5	0.6	0.4	0.5	0.6	0.6	0.5	0.5	0.6	0.6
uels[1]	**22.7**	**25.3**	**27.4**	**29.8**	**29.5**	**28.8**	**29.0**	**28.7**	**28.4**	**31.2**
Coal	3.0	2.7	2.4	2.4	2.1	2.0	2.1	1.9	1.1	1.1
Natural gas	2.1	2.6	3.8	4.9	5.1	5.0	4.5	4.5	4.8	5.6
Petroleum	17.0	18.9	19.4	20.2	19.9	19.3	19.9	19.7	19.8	21.5
ructural Materials	**12.9**	**12.8**	**12.5**	**12.4**	**11.9**	**11.6**	**11.9**	**10.2**	**9.4**	**9.8**
Clay products	1.5	1.4	1.3	1.3	1.2	1.2	1.1	1.0	1.0	1.1
Cement	3.7	4.0	4.0	3.9	3.9	3.8	3.9	3.3	3.2	3.6
Lime	0.8	0.7	0.6	0.6	0.6	0.5	0.5	0.4	0.4	0.4
Sand and gravel	4.5	4.1	4.2	4.0	3.7	3.6	3.8	3.2	2.8	2.8
Stone	2.4	2.6	2.4	2.6	2.5	2.5	2.6	2.3	2.0	1.9
Grand Totals	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

[1] Includes minor items not specified.

rovincial and Territorial Mineral Production in 1969

Ontario has long been the leading mineral-producing province in Canada and was gain the leader in 1969, although the gap between that province and Alberta, the second rgest producer, closed appreciably; Ontario's proportion of the total Canadian value of ineral production declined from 28.7 p.c. in 1968 to 25.9 p.c. in 1969 while Alberta's rose om 23.1 p.c. to 25.4 p.c. The narrowing of the gap was the result of steadily higher itput of petroleum and natural gas in Alberta and of production losses in Ontario caused y labour disputes in the country's two largest nickel-producing plants, both of which also oduce many byproducts of their nickel-copper operations that were discontinued for a ngthy period. Following the two leading provinces were: Quebec with 15.4 p.c. of the alue of output, British Columbia with 9.0 p.c., Saskatchewan 7.4 p.c., Manitoba 5.2 p.c., ewfoundland 5.1 p.c. and the other provinces and the territories ranging downward from 5 p.c. to 0.02 p.c.

6.—Value of Mineral Production, by Province, 1960-69

Year	Newfoundland (incl. Labrador)	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitob
	$	$	$	$	$	$	$
1960	86,637,123	1,172,587	65,453,531	17,072,739	446,202,726	983,104,412	58,702,6
1961	91,618,709	606,644	61,693,156	18,801,981	455,522,933	943,669,488	101,489,8
1962	101,858,960	677,906	61,651,093	21,811,575	519,453,166	913,342,141	158,932,1
1963	137,796,707	798,345	66,317,617	28,343,433	540,615,068	874,208,868	169,626,6
1964	182,152,656	831,283	66,073,596	48,676,712	684,583,430	904,077,030	173,872,5
1965	207,557,627	599,387	70,771,827	82,164,344	715,900,973	993,730,951	182,143,7
1966	244,020,086	1,062,513	85,416,974	90,207,633	771,179,636	957,851,890	179,342,1
1967	266,365,149	1,775,001	77,226,142	90,440,172	741,435,723	1,194,548,906	184,678,5
1968	309,711,994	976,742	56,927,553	88,451,436	728,783,871	1,355,628,670	209,625,5
1969p	239,093,692	1,050,000	54,175,233	98,393,595	720,067,082	1,214,456,935	245,595,7

Year	Saskatchewan	Alberta	British Columbia	Yukon Territory	Northwest Territories	Canada
	$	$	$	$	$	$
1960	212,093,225	395,344,010	186,261,646	13,330,198	27,135,087	2,492,509,98
1961	215,210,168	495,548,442	187,713,736	12,750,304	18,142,076	2,602,767,47
1962	241,889,176	555,480,984	234,493,431	13,137,730	17,570,968	2,840,299,29
1963	274,171,427	644,387,580	260,356,615	14,366,936	15,891,029	3,026,880,31
1964	293,245,302	709,407,372	268,723,824	15,204,103	18,081,395	3,364,929,27
1965	328,753,797	761,831,887	280,156,051	13,400,535	77,456,418	3,714,467,57
1966	348,493,608	848,616,941	330,898,073	11,975,757	111,239,350	3,980,304,56
1967	361,824,119	974,301,975	380,487,993	14,990,529	118,282,610	4,406,356,88
1968	357,173,719	1,091,749,049	389,311,009	21,365,555	115,636,016	4,725,341,14
1969p	347,652,483	1,193,279,802	422,765,745	37,655,800	116,456,132	4,690,642,20

7.—Value of Metallics, Non-metallics, Fuels and Structural Materials Produced, by Province, 1968 and 1969

Year and Province or Territory	Metallics	Non-metallics	Fuels	Structural Materials	Totals
	$	$	$	$	$
1968					
Newfoundland (incl. Labrador)	286,729,864	16,177,369	—	6,804,761	309,711,9
Prince Edward Island	—	—	—	976,742	976,7
Nova Scotia	1,717,585	14,658,429	25,099,048	15,452,491	56,927,5
New Brunswick	69,622,942	2,915,246	7,436,931	8,476,317	88,451,4
Quebec	432,953,587	189,419,686	20,636	106,389,962	728,783,8
Ontario	1,122,956,239	35,992,921	7,765,753	188,913,757	1,355,628,6
Manitoba	169,605,636	2,416,997	15,569,882	22,033,018	209,625,4
Saskatchewan	47,429,200	75,410,248	221,212,498	13,121,773	357,173,7
Alberta	5,535	78,842,065	977,554,332	35,347,117	1,091,749,0
British Columbia	234,186,463	22,405,105	86,965,933	45,753,508	389,311,0
Yukon Territory	12,681,430	8,684,125	—	—	21,365,5
Northwest Territories	114,711,166	—	924,850	—	115,636,0
Canada, 1968	**2,492,599,647**	**446,922,191**	**1,342,549,863**	**443,269,446**	**4,725,341,**
1969p					
Newfoundland (incl. Labrador)	217,791,222	14,862,470	—	6,440,000	239,093,0
Prince Edward Island	—	—	—	1,050,000	1,050,0
Nova Scotia	1,387,797	15,422,861	21,584,192	15,780,383	54,175,2
New Brunswick	81,334,471	3,177,760	5,936,649	7,944,715	98,393,5
Quebec	407,220,836	197,448,531	20,335	115,377,380	720,067,0
Ontario	979,135,068	36,297,094	7,621,149	191,403,624	1,214,456,9
Manitoba	205,766,131	2,948,422	15,511,307	21,369,841	245,595,7
Saskatchewan	40,203,537	78,419,461	214,930,481	14,099,004	347,652,4
Alberta	3,789	63,410,234	1,093,653,602	36,212,177	1,193,279,8
British Columbia	247,703,731	22,400,446	101,132,653	51,528,915	422,765,7
Yukon Territory	24,954,400	12,701,400	—	—	37,655,8
Northwest Territories	115,446,563	—	1,009,569	—	116,456,1
Canada, 1969	**2,320,947,545**	**447,088,679**	**1,461,399,937**	**461,206,039**	**4,690,642,**

Newfoundland.—In 1969, the value of mineral production in Newfoundland de-ased by 23 p.c. to $239,100,000 because of prolonged strikes that closed the iron-mining -rations of Iron Ore Company of Canada Limited and Wabush Mines in Labrador. As onsequence, output of iron ore declined from 19,700,000 tons to 14,700,000 tons and its ue from $246,500,000 to $179,000,000. All metallic minerals produced in the province l a value of $217,800,000 in 1969 and made up over 91 p.c. of the total mineral value; put of copper, zinc and lead followed iron ore, in that order. Copper was produced at r mines in the Island of Newfoundland and zinc and lead were the main products at the chans Unit of American Smelting and Refining Company. Asbestos, the major indus-l mineral produced, declined in value by $1,700,000 because of a two-month strike in l-year at Advocate Mines Ltd.'s open-pit operation at Baie Verte. Fluorspar value was her at over $3,000,000 and the value of structural materials was slightly below the 8 figure.

Prince Edward Island.—Mineral output in this province is confined to structural terials valued at about $1,000,000 a year, of which sand and gravel contributed 85.7 p.c. l stone 14.3 p.c. in 1969.

Nova Scotia.—The total value of mineral output in Nova Scotia was down slightly 1969 to $54,200,000 from $56,900,000 in 1968. Coal, which is still the province's leading neral in terms of value, continued its declining trend in both quantity and value, produc-n dropping to 2,600,000 tons valued at $21,600,000 from 3,100,000 tons valued at 5,100,000 in the previous year. Coal was produced from nine mines and development s begun of the Lingan mine which will produce relatively low sulphur coal from a seam t dips below the ocean. Four inclined shafts will be driven and the mine will be highly chanized, using the longwall system for extraction. Cape Breton Development Corpora-n, a federal government agency that took over the coal mines and related interests of minion Steel and Coal Corporation, Limited, completed its first full year of operation 1969. The Corporation offered voluntary pre-retirement to 1,000 older men of the 00 employees in coal operations and started to lower the scale of operations to about 00,000 tons a year. No. 20 Colliery at Glace Bay was closed and the work force trans-red to other collieries.

In 1969, the value of industrial minerals produced in the province was higher than that mineral fuels (coal), non-metallics having a value of $15,400,000 and structural materials 5,800,000. The non-metallics industry is comprised almost entirely of gypsum, salt and rite production, oriented largely to the United States market.

New Brunswick.—New Brunswick's mineral production value increased in 1969 to 3,400,000 from $88,500,000 in the previous year; $81,300,000 or about 83 p.c. of the total s comprised of metallics. Zinc and lead output increased appreciably but copper and ver were down slightly. Brunswick Mining and Smelting Corporation Limited, a bsidiary of Noranda Mines Limited, is by far the major base metal mining operation in e province and continued to operate two zinc-lead-copper mines and two mills near thurst; a zinc-lead smelter at Belledune, about 20 miles north of Bathurst, was operated East Coast Smelting and Chemical Company Limited, also a Noranda subsidiary. vo other companies—Heath Steele Mines Limited and Nigadoo River Mines Limited—erated zinc-lead-copper mines in the Bathurst area. Heath Steele was installing equip-nt at year-end to expand its mill capacity from 1,600 to 3,000 tons a day.

Industrial minerals accounted for an output value of $11,100,000 in 1969 and mineral els for $5,900,000, both being lower than their 1968 values. There were no significant anges in value or development of any minerals except for coal, which contributed almost of the output value of the mineral fuels. Following agreement between the federal and ovincial governments, New Brunswick assumed management in 1968 of the coal mines Minto so that a gradual phasing-out of the uneconomic coal industry could be under-ken. Purchase of the four remaining coal mining operations was made as a follow-up to

the Grand Lake Development Act passed by the provincial legislature in 1968. A ne provincial company, N.B. Coal Limited, was incorporated to take over and manage tl Minto coal operations.

Quebec.—The mineral output of Quebec in 1969 was worth $720,100,000, which ma be compared with the previous year's $728,800,000. The loss in value of iron ore produ tion, which declined about $28,000,000 to $109,400,000 due to strikes, was the main co tributing factor in the decline of $25,700,000 in metallic output to $407,200,000. Oth metallics recorded little change in value. Copper production, second to Ontario in Canad was about the same as in 1968 notwithstanding the long shutdown from May 13 to August of the 11,000-ton-a-day plant and associated smelter of Gaspé Copper Mines Limite Several new mines began production in 1969 and other plants were being enlarged, develop or planned for the years ahead. Iron ore announcements added considerable encourag ment to increased production. Sept Îles and Pointe Noire are both being enlarged so th 150,000-ton iron ore carriers, and eventually 200,000-ton carriers, can be loaded. Al of importance was the signing of contracts for the sale of iron ore concentrates to Jap and the announcement that Quebec Cartier Mining Company was studying the developme of its Mount Wright iron ore property, 75 miles north of Lac Jeannine, for initial develo ment at 5,000,000 tons a year, to be later increased to 10,000,000 tons a year.

Asbestos production from 10 mines, one of which closed in January 1969, totall 1,336,000 tons of fibre valued at $154,400,000 and was second to copper in terms of valu Asbestos, together with titanium dioxide output valued at $29,100,000, comprised ab 93 p.c. of total non-metallics output value. Asbestos producers in the Eastern Townshi continued to expand their mine and mill capacities and to improve recovery of fibre fr material milled.

Quebec, like Ontario, has a relatively mature mineral industry that is large and we diversified with the exception of the mineral fuels—coal, crude petroleum and natural g However, there still remain large areas of unexplored and relatively little explored ground the province that are favourable for mineral deposition.

Ontario.—Mineral output value in Ontario declined from the record high $1,355,600,000 in 1968 to $1,214,500,000 as a result mainly of losses incurred in the metall sector because of plant shutdowns for prolonged periods that resulted in substantial los in nickel, copper and byproduct metals production. Labour strife at some iron ore produ tion plants in the province resulting in closures at various periods during the year a affected production. Nickel output was down 18.3 p.c. from the previous year's rec of $405,200,000 and copper declined 15.4 p.c. in value to $235,500,000. Metallics in 19 represented 83 p.c. of the total value of the provincial mineral output; in 1969 they rep sented 81 p.c. of the total.

Inco and Falconbridge, the main nickel-copper producers in Ontario, are each engag in large-scale expansion programs that together will increase Canada's nickel producti capacity from the 600,000,000 lb. a year at the beginning of 1969 to about 800,000,000 a year in 1972 (see p. 694). There are many Ontario mines other than those of Inco a Falconbridge that produced copper in 1969, often as a co-product of other base me production. The two largest were the Kidd Creek mine of Ecstall Mining Limited n Timmins and the Geco Division of Noranda Mines Limited at Manitouwadge. Six n copper mines are being developed for production by 1972.

Ontario produces by far the most mineral commodities of any of the provinces a territories and, in one sense, might be termed as having the most mature mineral econo but it is by no means even close to being fully explored and developed in either mine resources or their maximum degree of processing or marketing. Large, important mine deposits are being discovered each year both in long-established mining areas and at so distance from those centres, so that the future for mineral growth in the province is ind promising.

Manitoba.—The province's value of mineral production advanced to $245,600,000 1969 from $209,600,000 in 1968. The largest gains were made by nickel, copper and c. Metallics output accounted for $205,800,000 of the total.

Inco operated two nickel mines, a smelter and a refinery in the Thompson area and s developing two other mines in the same area for production in 1970. Sherritt Gordon nes Limited operated its Lynn Lake nickel mine and continued development of its Fox ke copper-zinc deposit scheduled for production in 1970 at 3,000 tons of ore a day. mbarton Mines Limited began production of 700 tons of nickel-copper ore a day at its d River location. Hudson Bay Mining and Smelting Co. Limited operated five mines Manitoba (one in Saskatchewan) and processed its own and custom ores at the company's n Flon mill and copper-zinc smelter. The company is developing two additional mines Manitoba for 1971 production. Exploration continued at high levels in the northern cambrian areas of the province, particularly in the Thompson nickel area, where pre- inary exploration had previously indicated favourable conditions.

Saskatchewan.—The value of mineral production in Saskatchewan declined from 7,200,000 in 1968 to $347,700,000 in 1969; values of uranium, copper and zinc registered largest percentage declines of 16.8 p.c., 12.8 p.c. and 8.3 p.c., respectively. Production s slightly higher for the industrial minerals group but lower for both metallics and mineral ls.

Eldorado Nuclear Limited, one of Canada's four remaining uranium producers, nounced in May that it would reduce the milling rate at Beaverlodge to about 50 p.c. of pacity from the then operating rate of about 85 p.c. The mill rate adjustment to 900 tons ay was based on sales commitments. Exploration for uranium in the Beaverlodge area tinued strong but considerably more attention was paid to the Wollaston Lake area in thern Saskatchewan where Gulf Minerals Company discovered uranium in 1968 and which it announced preliminary results in July 1969. Copper was produced at three nes in the province, two of which also produced zinc. One of the latter—Western clear Mines Limited—closed its mine in July when ore reserves were exhausted. Potash duction was higher both in quantity and value but the industry continued to experience rketing problems, since an oversupply situation existed throughout the world and prices re at their lowest point in history. Canada remained the world's leading potash exporter l was second only to the Soviet Union in production.

Alberta.—Of Alberta's total value of mineral production in 1969 of $1,193,300,000, mineral fuels accounted for $1,093,700,000. Crude petroleum alone contributed 61.3 p.c. the total of all minerals, natural gas 18.3 p.c. and natural gas byproducts 10.9 p.c.

The Prudhoe Bay oil discovery and subsequent developments there and in Canada's North have already had a significant impact on oil development and marketing plans Western Canada, particularly in Alberta where the mineral economy is closely linked to and gas production and markets. Governments and regulatory boards are making ppraisals of many development, production and marketing situations that are at present gely problematical but nevertheless must be considered in the total appraisal. Late in 9, authorization was given for the construction by Syncrude Canada Limited of a ond and larger plant (80,000 bbl. daily) for the extraction of oil at its Athabasca River sands site. Meanwhile much of the province's oil production capacity remains in- erative because of markets, even though reserves of both oil and gas register yearly reases.

Elemental sulphur recovered from the processing of natural gas was by far the most portant non-metallic produced in 1969 and comprised $60,716,000 of the total $63,400,000 ue of non-metallics. Production will rise with the continuing growth of the natural gas ustry as markets develop but it is expected that, well into the 1970s, prices will remain relatively low levels throughout the world as conditions of oversupply prevail. Produc- n of structural materials continues to keep pace with the requirements of the total pro- cial economy, particularly those of the construction industry.

It is expected that output will rise substantially in the decade ahead from the 4,422,03 tons produced in 1969, as bituminous mines are developed to fill the steadily rising cokin coal requirements of Japan, the export markets developing at other overseas locations, an the recently appearing needs of steel centres in Ontario. Subbituminous output shoul also increase as the need for domestic and possibly United States thermal-generated electri power rises. Subbituminous coal production in 1969 amounted to 3,188,000 tons.

British Columbia.—The value of British Columbia's mineral output in 1969 wa $422,800,000 compared with $389,100,000 in 1968, a gain of 8.7 p.c. Copper continued to b the leading mineral in terms of value, contributing nearly 20 p.c. of the total, followed b crude petroleum with 13.7 p.c. Molybdenum experienced the largest percentage gain i value of output over 1968; it rose nearly 45 p.c. to reach $47,100,000.

Ten companies operating mines in the province reported production of copper in 196 and another six properties were under development for 1970-72 production. Four min produced molybdenum, two of them as a co-product of copper. Extensive exploration f copper-molybdenum properties continued unabated and several are scheduled for large-sca production within the next two years. Cominco Ltd. operated its two lead-zinc mines an metallurgical plants in the southeastern part of British Columbia, producing refined zin lead and silver and recovering as byproducts other metals (antimony, bismuth, cadmiu tin and iron). Cominco also produces, using effluent stock gases and industrial mineral several types of industrial chemicals and fertilizers.

Production of crude petroleum was 15.1 p.c. and natural gas 18.6 p.c. higher than 1968. The quantity of coal produced increased only 6,300 tons over 1968 but its valu increased nearly $1,900,000 to reach almost $7,110,000. Most of the coal was exported Japan. The continuing development of extensive metallurgical coal deposits in Britis Columbia (and in Alberta) to meet commitments for shipments to Japan beginning in 197 and continuing far into the future is, of course, one of the major developments of th Canadian mining scene. Their development and the building of handling and transport tion facilities have wide implications for the economies of the two western provinces, f other mineral commodities, and for the total Canadian economy.

Yukon Territory and Northwest Territories.—The value of minerals produced the Yukon Territory increased from $21,400,000 in 1968 to $37,700,000 in 1969, the metalli sector increasing from $12,700,000 to nearly $25,000,000. The large increase was the resu of mill start-up by Anvil Mining Corporation Limited's 5,500-ton-a-day zinc-lead operatio at Ross River with shipments to Japan beginning later in the year. Plans were alrea under way to increase mill capacity to 6,700 tons a day. Copper and silver producti also increased appreciably in value. Asbestos fibre production from Canada's mo northerly open-pit mine—Cassiar Asbestos Corporation Limited's mine at Clinton Creek increased from almost 63,600 tons in 1968 to 88,000 tons valued at $12,700,000 in 1969.

Mineral output in the Northwest Territories in 1969 increased only slightly $116,500,000 from $115,600,000 in the previous year. Metallics production was wor $115,400,000, most of which was accounted for by lead, zinc and byproduct producti from the Pine Point mine on the south shore of Great Slave Lake. The mine and 8,000-to a-day mill of Pine Point Mines Limited, a subsidiary of Cominco Ltd., now operat entirely on concentrating-grade ore that averaged, in 1968, 3.75 p.c. zinc, 3.06 p.c. lead, a 4.30 oz. of silver a ton; initially, the company shipped considerable open-pit high-grade o with no mill treatment but sales of direct-shipping ore ended in 1968 when 353,000 to were shipped, averaging 25 p.c. zinc and 19 p.c. lead. Gold from Yellowknife area mir was valued at $12,900,000 in 1969, down slightly from $13,300,000 in the previous ye Exploration for oil continued near the Arctic Coast and on the Arctic islands and drilli was undertaken at several promising locations. The program is probably only the beginni of a long period of extensive exploration of promising areas that was sparked by the maj oil discovery at Prudhoe Bay, Alaska, in 1967.

MINERAL REFERENCES

Locations of mines and mining areas mentioned in the Mines and Minerals Chapter of this volume.

Department of Energy, Mines and Resources Map 900A, revised annually, shows names and locations of all producing mines and the principal oil and gas fields in Canada.

68. Werner Lake—nickel-copper mine
69. Dumbarton Mine—nickel-copper
70. Wabowden—nickel-copper mine
71. Thompson Area—nickel-copper mines, smelter and refinery
72. Snow Lake Area—copper-lead-zinc mines
73. Flin Flon Area—copper-zinc-lead mines and smelter
74. Fox Lake Mine—copper-zinc
75. Lynn Lake—nickel-copper mine
76. Uranium City—uranium mine
77. Gulf Minerals—uranium discovery
78. La Ronge—copper mine
79. Flexar Mine—copper
80. Hanson Lake Mine—copper
81. Saskatoon Area—potash
82. Belle Plaine—potash mine
83. Esterhazy—potash mine
84. Estevan—coal mines
85. Ellef Ringnes Island—petroleum and natural gas exploratory drilling
86. Drake Point—natural gas discovery
87. 10E Atkinson H25—petroleum discovery
88. Echo Bay Mine—silver
89. Yellowknife—gold mine
90. Pine Point—lead-zinc mines
91. Rainbow Lake Field—oil
92. McMurray—oil sands (petroleum)
93. Fort Saskatchewan—nickel refinery
94. Clover Bar—gypsum plant
95. Star-Key Mines—coal
96. Wabamun—coal
97. McIntyre—coal
98. Cardinal River—coal
99. Strahan-Ricinus Area—petroleum and natural gas exploratory drilling
100. Halkirk-Forestburg Area—coal
101. Sheerness—coal
102. Drumheller—coal
103. Cascade Area—coal
104. Coleman—coal
105. Crowsnest Pass Area—coal
106. Fording—coal
107. Kimberley—lead-zinc mine
108. Bluebell Mine—lead-zinc
109. Reeves-MacDonald Mine—zinc-lead
110. Trail—refinery
111. Rossland—molybdenum mine
112. Brenda Mine—copper-molybdenum
113. Highland Valley Area—copper mines
114. Giant Mascot Mine—nickel
115. Britannia Mine—copper
116. Texada Mine—iron-copper
117. Brynnor Mine—iron
118. Buttle Lake—zinc-copper mine
119. Zeballos—iron mine
120. Utah Construction—copper discovery
121. Boss Mountain—molybdenum mine
122. Endako—molybdenum mine
123. Wesfrob Mine—iron
124. Alice Arm Area—molybdenum mine
125. Granduc—copper
126. Bowser Basin—petroleum and natural gas exploratory drilling
127. Churchill Copper—mine
128. Cassiar—asbestos mine
129. Arctic Gold and Silver—mine (gold-silver)
130. Whitehorse Area—copper mines
131. Carmacks—coal mine
132. Anvil Mine—zinc-lead
133. Keno Hill—silver-lead
134. Clinton Creek—asbestos mine
135. Hecate Strait-Queen Charlotte Sound—petroleum and natural gas exploratory drilling
136. Vancouver Island Coast—petroleum and natural gas exploratory drilling

8.—Detailed Mineral Production, by Province, 1969 with Totals for 1968

Minera	Newfoundland (incl. Labrador)	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon Territory	Northwest Territories	Canada 1969p	Canada 1968
Metallics.....$	**217,791,222**	**1,387,797**	**81,334,471**	**407,220,836**	**979,135,068**	**205,766,131**	**40,203,537**	**3,789**	**247,703,731**	**24,954,400**	**115,446,563**	**2,320,947,545**	**2,492,599,647**
Antimony...lb.	—	—	—	—	—	—	—	—	845,000	—	—	845,000	1,159,960
$	—	—	—	—	—	—	—	—	507,000	—	—	507,000	614,779
Bismuth....lb.	—	—	76,300	502,398	—	—	—	—	142,000	—	—	720,698	648,232
$	—	—	376,922	2,181,797	—	—	—	—	701,480	—	—	3,260,199	2,457,594
Cadmium..lb.	—	—	113,400	329,968	2,463,820	232,957	83,460	—	1,074,800	70,000	—	4,368,405	5,014,965
$	—	—	394,632	1,076,998	8,453,383	810,690	290,440	—	3,740,443	243,600	—	15,010,186	14,292,650
Calcium....lb.	—	—	—	—	888,361	—	—	—	—	—	—	888,361	468,512
$	—	—	—	—	925,831	—	—	—	—	—	—	925,831	450,946
Cobalt.....lb.	—	—	—	—	2,503,400	700,547	—	—	—	—	—	3,203,947	4,029,549
$	—	—	—	—	5,430,540	1,491,240	—	—	—	—	—	6,921,780	8,687,652
Columbium lb.	—	—	—	3,010,356	—	—	—	—	—	—	—	3,010,356	2,181,304
(Cb_2O_5). $	—	—	—	2,925,698	—	—	—	—	—	—	—	2,925,698	2,036,315
Copper.....lb.	38,779,180	163,418	14,124,300	315,918,502	457,888,338	74,083,644	36,021,367	—	162,687,260	15,718,700	1,071,200	1,116,455,909	1,266,625,187
$	19,944,133	84,046	7,264,127	162,476,885	235,491,972	38,101,218	18,525,789	—	83,670,058	8,084,127	550,920	574,193,275	607,944,415
Gold.....oz.	7,440	13	1,567	737,554	1,206,110	29,304	37,839	100	112,821	26,305	343,116	2,502,169	2,743,021
$	280,488	490	59,076	27,805,786	45,470,347	1,104,761	1,426,530	3,770	4,253,352	991,700	12,935,473	94,331,773	103,439,321
Indium.....oz.	—	—	—	—	—	—	—	—	..	—	—	..	..
$	—	—	—	—	—	—	—	—	..	—	—	..	..
Iron ore....ton	14,733,410	—	—	12,875,400	10,466,740	—	—	—	1,925,090	—	—	40,000,640	47,443,303
$	178,992,960	—	—	109,405,064	126,081,382	—	—	—	17,450,904	—	—	431,930,310	532,694,110
Iron, ton	—	—	—	..	—	—	—	—	—	—	—	..	..
remelt. $	—	—	—	23,475,000	—	—	—	—	—	—	—	23,475,000	22,022,849
Lead.....lb.	42,188,360	5,214,050	112,281,000	2,808,600	25,490,900	1,184,870	—	—	205,096,100	30,800,000	205,000,000	630,063,880	680,350,911
$	6,387,318	789,407	16,999,343	425,222	3,859,322	179,389	—	—	31,051,550	4,663,120	31,037,000	95,391,671	91,439,162
Magnesium..lb.	—	—	—	—	20,969,620	—	—	—	—	—	—	20,969,620	19,856,937
$	—	—	—	—	7,093,714	—	—	—	—	—	—	7,093,714	6,181,992
Mercury....lb.	—	—	—	—	—	—	—	—	..	—	—	..	..
$	—	—	—	—	—	—	—	—	..	—	—	..	..
Molybde- lb.	—	—	—	2,954,387	—	—	—	—	27,337,257	—	—	30,291,644	22,464,273
num. $	—	—	—	5,499,316	—	—	—	—	47,123,801	—	—	52,623,117	37,317,958
Nickel.....lb.	—	—	—	546,000	293,675,891	129,700,541	—	—	2,728,000	—	—	426,650,432	528,716,212
$	—	—	—	622,440	330,966,930	147,713,568	—	—	3,109,920	—	—	482,412,858	528,235,798
Platinum oz.	—	—	—	—	266,100	..	—	—	—	—	—	266,100	485,891
group. $	—	—	—	—	26,449,000	..	—	—	—	—	—	26,449,000	46,199,718
Selenium....lb.	—	—	—	486,435	82,000	88,522	53,661	—	—	—	—	710,618	635,510
$	—	—	—	3,162,000	447,200	477,130	289,233	—	—	—	—	4,375,563	3,082,223
Silver.....oz.	963,100	247,064	4,172,200	4,103,420	22,033,095	489,345	636,906	10	5,431,267	2,990,056	2,026,513	43,092,976	45,012,797
$	1,858,783	476,834	8,052,346	7,919,600	42,523,873	944,436	1,229,229	19	10,482,345	5,770,808	3,911,170	83,169,443	104,114,599
Tellurium..lb.	—	—	—	87,240	5,100	7,120	4,317	—	—	—	—	103,777	70,991
$	—	—	—	567,000	30,700	46,000	27,888	—	—	—	—	671,588	458,602
Thorium....lb.	—	—	—	—	29,014	—	—	—	—	—	—	29,014	139,191
$	—	—	—	—	55,127	—	—	—	—	—	—	55,127	261,836

8.—Detailed Mineral Production, by Province, 1969 with Totals for 1968—concluded

Mineral	Newfoundland (incl. Labrador)	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon Territory	Northwest Territories	Canada 1969p	Canada 1968
Metallics—concluded													
Tin.....lb.	—	—	—	—	—	—	—	—	268,000	—	—	268,000	358,191
$	—	—	—	—	—	—	—	—	493,120	—	—	493,120	497,885
Tungsten (WO3). lb.	—	—	—	—	—	—	—	—	—	—	..	..	..
$	—	—	—	—	—	—	—	—	—	—	..	..	..
Uranium (U3O8). lb.	—	—	—	—	6,150,215	—	1,559,332	—	—	—	—	7,709,547	7,402,196
$	—	—	—	—	38,750,506	—	10,915,000	—	—	—	—	49,665,506	52,284,580
Yttrium (Y2O3). lb.	—	—	—	—	86,127	—	—	—	—	—	—	86,127	113,330
$	—	—	—	—	675,549	—	—	—	—	—	—	675,549	936,067
Zinc.....lb.	67,810,500	243,070	316,402,000	391,845,230	698,816,100	97,818,114	49,241,154	—	296,255,800	34,150,000	440,000,000	2,392,581,968	2,318,784,367
$	10,327,540	37,020	48,188,025	59,678,030	106,429,692	14,897,699	7,499,428	—	45,119,758	5,201,045	67,012,000	364,390,237	326,948,596
Non-metallics $	**14,862,470**	**15,422,861**	**3,177,760**	**197,448,531**	**36,297,094**	**2,948,422**	**78,419,461**	**63,410,234**	**22,400,446**	**12,701,400**	—	**447,088,679**	**446,922,191**
Arsenious oxide. lb.	—	—	—	—	700,000	—	—	—	—	—	—	700,000	689,004
$	—	—	—	—	50,000	—	—	—	—	—	—	50,000	48,527
Asbestos...ton	55,500	—	—	1,336,000	35,000	—	—	—	81,950	88,000	—	1,596,450	1,595,951
$	10,100,000	—	—	154,410,000	4,224,000	—	—	—	15,323,600	12,701,400	—	196,759,000	185,024,662
Barite.....ton	—	120,400	—	—	—	—	—	—	20,992	—	—	141,392	138,059
$	—	1,100,000	—	—	—	—	—	—	319,568	—	—	1,419,568	1,262,687
Diatomite..ton	—	—	—	—	—	—	—	—	487	—	—	487	521
$	—	—	—	—	—	—	—	—	11,340	—	—	11,340	17,159
Feldspar...ton	—	—	—	11,743	—	—	—	—	—	—	—	11,743	10,620
$	—	—	—	309,123	—	—	—	—	—	—	—	309,123	243,678
Fluorspar...ton	..	—	—	—	—	—	—	—	—	—	—	..	..
$	3,036,470	—	—	—	—	—	—	—	—	—	—	3,036,470	2,603,347
Gem stones.lb.	—	—	—	—	5,000	—	—	—	40,000	—	—	45,000	55,015
$	—	—	—	—	7,500	—	—	—	100,000	—	—	107,500	114,670
Gypsum....ton	490,000	5,211,548	82,423	—	630,000	180,000	—	—	278,000	—	—	6,871,971	5,926,940
$	1,176,000	9,214,892	237,310	—	1,539,000	487,500	—	—	778,400	—	—	13,433,102	11,825,382
Helium...Mcf.	—	—	—	—	—	—	..	—	—	—	—	..	..
$	—	—	—	—	—	—	..	—	—	—	—	..	..
Magnesitic dolomite and brucite. ton	—	—	—	..	—	—	—	—	—	—	—	..	..
$	—	—	—	3,000,000	—	—	—	—	—	—	—	3,000,000	3,045,984
Nepheline syenite. ton	—	—	—	—	502,893	—	—	—	—	—	—	502,893	426,595
$	—	—	—	—	5,881,818	—	—	—	—	—	—	5,881,818	4,738,008
Nitrogen..Mcf.	—	—	—	—	—	—	..	—	—	—	—	..	..
$	—	—	—	—	—	—	..	—	—	—	—	..	..
Peat moss..ton	—	11,700	81,000	124,700	17,600	16,000	400	8,000	54,700	—	—	314,100	293,628
$	—	383,000	2,495,200	3,343,200	487,300	353,000	9,700	232,100	1,413,500	—	—	8,717,000	8,658,194
Potash (K2O). ton	—	—	—	—	—	—	3,146,160	—	—	—	—	3,146,160	2,917,611
$	—	—	—	—	—	—	67,119,877	—	—	—	—	67,119,877	65,121,309

Pyrite, ton	—	—	—	...	—	—	—	—	...	—	—	...	...
pyrrhotite. $	—	—	—	2,011,198	—	—	—	—	100,000	—	—	2,111,198	2,286,442
Quartz.....ton	—	11,000	—	790,614	873,000	389,925	167,152	—	31,903	—	—	2,263,594	2,554,565
$	—	110,000	—	3,919,465	468,700	1,033,697	167,152	—	154,609	—	—	5,853,623	5,703,746
Salt.....ton	—	424,656	—	—	3,559,845	42,200	95,000	125,469	—	—	—	4,247,170	4,864,324
$	—	4,614,969	—	—	19,618,283	900,210	1,828,866	2,462,092	—	—	—	29,424,420	31,170,092
Soapstone, talc, ton	..	—	—	..	..	—	—	—	—	—	—	81,427	80,589
pyrophyllite$	550,000	—	—	289,213	352,000	—	—	—	—	—	—	1,191,213	1,080,654
Sodium ton	—	—	—	—	—	—	508,484	—	—	—	—	508,484	459,669
sulphate. $	—	—	—	—	—	—	8,388,717	—	—	—	—	8,388,717	7,082,575
Sulphur, in ton	—	—	34,250	72,074	241,280	—	—	—	203,200	—	—	550,804	666,370
smelter gas. $	—	—	445,250	1,099,732	3,628,813	—	—	—	3,048,000	—	—	8,221,795	8,915,202
Sulphur, ton	—	—	—	—	1,456	6,384	29,446	2,894,200	53,451	—	—	2,984,937	2,580,746
elemental. $	—	—	—	—	39,680	174,015	905,149	60,716,042	1,151,429	—	—	62,986,315	79,963,600
Titanium ton	—	—	—	...	—	—	—	—	—	—	—	..	..
dioxide, etc.$	—	—	—	29,066,600	—	—	—	—	—	—	—	29,066,600	28,016,183
Fuels.....$	—	**21,584,192**	**5,936,649**	**20,335**	**7,621,149**	**15,511,307**	**214,930,481**	**1,093,653,602**	**101,132,653**	—	**1,009,569**	**1,461,399,937**	**1,342,549,863**
Coal.....ton	—	2,627,869	713,646	—	—	—	1,975,982	4,422,036	895,565	—	—	10,635,098	10,980,850
$	—	21,584,192	5,831,547	—	—	—	3,617,614	13,895,992	7,109,609	—	—	52,038,954	53,935,893
Natural Mcf.	—	—	107,969	135,569	11,409,133	—	56,167,413	1,609,325,945	308,083,938	—	50,784	1,985,280,751	1,692,300,787
gas. $	—	—	92,592	20,335	4,381,792	—	7,209,729	218,791,048	33,047,665	—	21,432	263,564,593	225,268,658
Natural gas by- bbl.	—	—	—	—	—	—	..	..	..	—	—	..	..
products. $	—	—	—	—	—	—	2,557,057	129,845,296	3,163,905	—	—	135,566,258	126,057,696
Petroleum, bbl.	—	—	8,936	—	1,177,139	6,189,638	89,492,907	284,241,338	25,569,776	—	818,943	407,498,677	379,396,276
crude. $	—	—	12,510	—	3,239,357	15,511,307	201,546,081	731,121,266	57,811,474	—	988,137	1,010,230,132	937,287,616
Structural Materials...$	**6,440,000**	**15,780,383**	**7,944,715**	**115,377,380**	**191,403,624**	**21,369,841**	**14,099,004**	**36,212,177**	**51,528,915**	—	—	**461,206,039**	**443,269,446**
Clay products....$	145,000	1,568,000	620,000	7,415,098	31,213,400	448,719	1,628,893	3,839,766	4,116,475	—	—	50,995,351	48,721,444
Cement....ton	..	..	..	2,390,206	3,269,284	491,101	270,023	856,544	852,500	—	—	8,543,622	8,165,805
$	1,960,000	4,164,083	2,169,715	47,377,602	59,337,443	11,261,502	7,970,111	19,138,991	17,878,440	—	—	171,257,887	152,003,739
Lime.....ton	—	—	—	451,571	1,129,516	51,286	—	85,782	—	—	—	1,718,155	1,439,967
$	—	—	—	4,759,680	12,787,781	824,620	—	1,736,220	—	—	—	20,108,301	17,385,635
Sand and ton	3,600,000	8,520,000	3,800,000	43,000,000	85,000,000	9,500,000	8,500,000	13,700,000	27,670,000	—	—	204,060,000[1]	205,234,509
gravel. $	3,400,000	7,700,000	1,650,000	18,000,000	55,500,000	6,000,000	4,500,000	10,800,000	22,200,000	—	—	130,650,000[1]	129,500,553
Stone.....ton	705,000	825,300	1,730,000	33,230,000	25,749,000	2,212,000	—	25,300	5,442,500	—	—	70,069,100[2]	75,939,767
$	935,000	2,348,300	3,505,000	37,825,000	32,565,000	2,835,000	—	697,200	7,334,000	—	—	88,194,500[2]	95,658,075
Grand Totals 1969p.....$	**239,093,692**	**54,175,233**	**98,393,595**	**720,067,082**	**1,214,456,935**	**245,595,701**	**347,652,483**	**1,193,279,802**	**422,765,745**	**37,655,800**	**116,456,132**	**4,690,642,200**[3]	...
Grand Totals 1968.....$	**309,711,994**	**56,927,553**	**88,451,436**	**728,783,871**	**1,355,628,670**	**209,625,533**	**357,173,719**	**1,091,749,049**	**389,311,009**	**21,365,555**	**115,636,016**	...	**4,725,341,147**[4]

[1] Includes 770,000 tons of sand and gravel valued at $900,000 produced in Prince Edward Island. [2] Includes 150,000 tons of stone valued at $150,000 produced in Prince Edward Island. [3] See footnotes[1] and [2]. [4] Includes stone, sand and gravel valued at $976,742 produced in Prince Edward Island.

Subsection 1.—Metals

The metallic minerals of greatest dollar value to Canada in 1969 were, in order: copp nickel, iron ore, zinc, lead, gold, silver, molybdenum, uranium and platinum group met These 10 metals, which accounted for 96 p.c. of the total value of metal production in 19 and several other metals of importance are dealt with separately below.

Copper.—Interruptions of operations at various mines and smelters due to lab strikes caused a decline in mine output of copper in 1969 to 558,200 tons valued $574,193,000, a decrease of 75,100 tons and $33,750,000 from 1968. Production of refi copper decreased to 450,650 tons from 524,950 tons in the previous year and consumpt declined 12,940 tons to 240,250 tons in 1969. Exports of copper in concentrates decrea by 4,000 tons to 157,800 tons and exports of refined copper decreased by 66,600 tons 210,000 tons.

Six smelters for the reduction of copper and nickel-copper ores and concentrates operated in Canada. In the Sudbury district of Ontario, The International Nickel Co pany of Canada, Limited (Inco) operates smelters at Copper Cliff and Coniston, a Falconbridge Nickel Mines Limited produces nickel-copper matte at its Falconbri smelter. Hudson Bay Mining and Smelting Co., Limited at Flin Flon, Man., smelts o and concentrates from its mines in Manitoba and Saskatchewan and custom ores and c centrates from mines in these provinces. Ores and concentrates from most of the cop mines in Ontario, Quebec and Newfoundland are smelted at the Noranda smelter of Nora Mines Limited and the Murdochville smelter of Gaspé Copper Mines Limited, both Quebec. Electrolytic copper refineries are operated by Inco at Copper Cliff, Ont., and Canadian Copper Refiners Limited, a subsidiary of Noranda Mines, at Montreal East, Q

Copper production in Newfoundland in 1969 was 19,390 tons valued at $19,944,0 from four producing mines. New Brunswick's copper output decreased to 7,062 tons valu at $7,264,000 from 8,265 tons valued at $7,950,000 in 1968. Production of copper in Que was 157,960 tons valued at $162,476,000, a decrease of 9,642 tons from 1968 but an incre in value of $1,245,000, accounted for by higher copper prices. More than 25 mines w in operation during 1969, the main centres of production being at or near Rouyn–Noran Val d'Or, Matagami, Chibougamau, Murdochville, and Stratford Centre. The Grandi mine near Chibougamau, the Lorraine mine at Belleterre, and the Marbridge mine Malartic were closed, while production commenced at mines owned by Delbridge Mi Limited near Noranda, Madeleine Mines Ltd. in Gaspé Provincial Park, and Renzy Mi Limited in Hainault township. Future producing mines were being developed n Stratford Centre and Val d'Or.

Copper was produced at more than 35 mines in Ontario in 1969, the main operati being the 21 nickel-copper mines of the Sudbury district, five copper-zinc and copper mi near Timmins, and three copper-zinc mines near Manitouwadge. Strikes at the Sudb area mines of Inco and Falconbridge accounted for most of the 61,674-ton decline in Ontari production to 228,944 tons in 1969. The value decreased by $42,820,000 to $235,490,0 Two new small mines were opened during the year and two were closed. Six mines being developed for production by 1972.

Most of Manitoba's production of 37,042 tons of copper valued at $38,101,000 ca from the mines of Hudson Bay Mining and Smelting Co., Limited at Flin Flon and Sn Lake and, to a smaller extent, from the Lynn Lake nickel-copper mine of Sherritt Gord Mines Limited. Hudson Bay operated six mines and continued development of Anderson Lake and Dickstone mines for production in 1971. Sherritt Gordon planned start production from its Fox Lake copper-zinc mine in 1970 at a rate of 3,000 tons of daily. Copper rejects from the Inco refinery at Thompson were shipped to Copper Cl Ont., for refining.

Copper production in Saskatchewan was from the mine of Anglo-Rouyn Mines Limit near La Ronge, that of Western Nuclear Mines, Ltd. at Hanson Lake, and from Huds Bay's Flexar mine and that portion of the Flin Flon orebody that lies on the Saskatchew

e of the provincial boundary. Production in 1969 was 18,011 tons, 4,070 tons less than 1968; the value was $18,525,000 or $2,716,000 less. Western Nuclear closed its Hanson ke mine in 1969 but continued exploration of other properties in the area.

Production of copper in British Columbia increased by 1 p.c. in 1969 to 81,344 tons lued at $83,670,000. No new properties started production in 1969 but Brenda Mines nited, near Peachland, Granduc Mines, Limited, near Stewart, and Churchill Copper rporation Ltd., near Magnum Creek, planned to start operations in 1970 at rates of 000, 7,000 and 750 tons a day, respectively. Utah Construction & Mining Co. plans start a 33,000-ton-a-day operation on Vancouver Island late in 1971. Lornex Mining rporation Ltd. and Valley Copper Mines Limited were negotiating for long-term sales ntracts for their huge Highland Valley deposits.

Production of copper in the Yukon Territory, all by New Imperial Mines Ltd. at hitehorse, increased by 2,560 tons in 1969 to 7,859 tons valued at $8,084,000. Copper oduced in the Northwest Territories is obtained as a byproduct of mining high-grade ver ores.

9.—Producers' Shipments of Copper, by Province, and Total Value, 1960-69

Year	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba
	tons	tons	tons	tons	tons	tons
0	13,863	—	—	157,470	206,272	12,793
1	15,752	—	—	149,007	211,647	12,454
2	17,308	204	3,674	147,431	188,995	12,738
3	14,012	237	8,964	141,400	178,960	16,980
4	13,615	204	9,296	158,088	197,917	29,777
5	14,823	187	10,082	173,938	216,272	30,808
6	19,393	115	7,089	171,998	202,976	31,315
7	21,965	28	5,786	166,385	276,146	29,560
8	23,299	140	8,265	167,601	290,618	34,583
9P	19,390	82	7,062	157,959	228,944	37,042

Year	Saskatchewan	British Columbia	Yukon Territory	Northwest Territories	Canada	
					Quantity	Value
	tons	tons	tons	tons	tons	$
0	31,785	16,559	—	520	439,262	264,846,637
1	33,479	15,845	440	463	439,087	255,157,626
2	32,017	54,489	215	314	457,385	282,732,696
3	29,772	62,218	—	16	452,559	284,403,710
4	20,442	57,561	—	—	486,900	324,467,834
5	18,732	42,565	—	471	507,878	380,951,781
6	19,561	52,880	—	748	506,076	453,523,980
7	22,975	86,319	3,584	566	613,314	582,585,272
8	22,081	80,561	5,299	866	633,313	607,944,415
9P	18,011	81,344	7,859	536	558,228	574,193,275

Nickel.—Canadian production of nickel in 1969 amounted to 213,325 tons valued at 32,400,000, a 19-p.c. decrease in quantity and a 9-p.c. decrease in value from 1968. ikes at the Sudbury-area mines of Inco and Falconbridge accounted for the decline. nada's position as the world's leading producer (58 p.c. of the non-communist world's kel in 1969) remained intact but Canada's proportion will decline in the mid-1970s as w deposits are opened in New Caledonia, Australia, the Philippines, the Dominican public, Guatemala, Venezuela and Colombia.

In Ontario, where 69 p.c. of Canada's nickel was produced, Inco operated 10 underound mines, two open-pit mines, four mills, two smelters, a copper refinery and an iron recovery plant in the Sudbury area, and a nickel refinery at Port Colborne. The

company continued development of four new mines in the Sudbury area and explored a carried out development on an orebody near Shebandowan. Falconbridge operated eig mines, four mills and a smelter, and continued the development of one new mine. Werner Lake in northwestern Ontario, Consolidated Canadian Faraday Limited (of whi Metal Mines Limited, the former operator at Werner Lake, is now a part) continued prod tion at about 600 tons of ore a day and sold a bulk nickel-copper concentrate to Inco.

In Manitoba, where over 30 p.c. of Canada's nickel was produced, Inco operated integrated nickel mining-concentrating-smelting-refining facility at Thompson and co tinued development of two new mines (see p. 687). Sherritt Gordon Mines Limited Lynn Lake produced nickel concentrates for shipment to the company's chemical refine at Fort Saskatchewan, Alta. Supplementary feed for the refinery was obtained by impo ing nickel-sulphide concentrates from Australia and New Caledonia. Dumbarton Mi Limited at Bird River started production, trucking ore to the Faraday mill. Falconbri continued development of the Manibridge mine at Wabowden with production plann for 1971.

Only one mine produced nickel in Quebec in 1969—the Renzy Mines Limited Hainault township which started an open-pit operation. In British Columbia, Giant Mas Mines Limited, near Hope, produced a bulk nickel-copper concentrate for export to Jap

10.—Producers' Shipments of Nickel, by Province, and Total Value, 1960-69

Year	Quebec	Ontario	Manitoba	British Columbia	Northwest Territories	Canada	
						Quantity	Value
	tons	tons	tons	tons	tons	tons	$
1960	—	201,650	9,059	1,890	1,907	214,506	295,640
1961	—	196,218	32,978	2,090	1,705	232,991	351,261
1962	1,540	166,582	61,482	1,738	900	232,242	383,784
1963	2,506	149,089	63,585	1,850	—	217,030	360,392
1964	2,338	162,094	62,365	1,699	—	228,496	379,320
1965	3,026	191,283	63,212	1,661	—	259,182	430,402
1966	3,975	160,214	57,812	1,594	—	223,610[1]	377,479
1967	1,622	190,059	54,714	2,090	—	248,647[2]	463,139
1968	886	203,747	57,923	1,658	—	264,358[3]	528,235
1969p	273	146,838	64,850	1,364	—	213,325	482,412

[1] Includes 15 tons of producers' shipments in Saskatchewan. [2] Includes 162 tons of producers' shipm in Saskatchewan. [3] Includes 144 tons of producers' shipments in Saskatchewan.

Iron Ore.*—Iron ore shipments amounted to 35,715,000 tons valued at $431,930,(in 1969, compared with shipments of 42,360,000 tons valued at $532,694,000 in 1968. B exports, at 27,900,000 tons, and domestic shipments, at 7,800,000 tons, were down shar from 1968. The inability to produce and deliver as a result of widespread iron ore indus strikes was mainly responsible for the losses. Strikes at Canada's two largest integra steelworks resulted in a production loss of about 1,300,000 short tons. Some of this tonn was made up in the last few months of the year but total steel production at 10,307,(short tons was 944,000 short tons lower than in 1968. Domestic consumption of iron ore iron and steel plants was 9,303,000 tons, of which some 7,400,000 tons came from Canad mines and about 1,900,000 tons from outside the country. Total receipts at iron and st plants, comprising 7,461,000 tons of domestic iron ore and 2,260,000 tons of imported i ore, exceeded consumption by 400,000 tons, and iron ore stocks at the plants went accordingly.

The Canadian iron ore industry began a period of slow growth in 1969; no new capac was added, only 420,000 tons is likely to be added in 1970, and none is expected in 19 The anticipated 1970 increase will include a 300,000-ton-a-year reduced iron ore plant

* Quantities of iron ore given in this Section are in long tons of 2,240 lb.

nbridge and a 120,000-ton expansion of the Sherman mine at Temagami. Inco's ex-on of 250,000 tons has been deferred to 1972. Zeballos Iron Mines Limited in British nbia was closed in 1969.

Production in 1969 came from mines of 17 companies of which eight had mines in rio, five in British Columbia, two in Quebec and two in Newfoundland (Labrador). of the latter also had mines in Quebec–Labrador.

Newfoundland and Quebec were the most seriously affected by the labour strike, nents from Newfoundland being down from 17,600,000 tons in 1968 to 13,200,000 tons, those from Quebec by 1,700,000 tons to 11,500,000 tons. Iron Ore Company of da, with direct-shipping ore from deposits on both sides of the Labrador–Quebec border hefferville and concentrating-grade deposits near Labrador City, is the largest shipper n ore in Canada, accounting for 35 p.c. of 1969 shipments. Other shippers were ec Cartier Mining Company and Hilton Mines Ltd., both in Quebec, and Wabush in Labrador.

Ontario shipments, at 9,300,000 tons, were down only slightly from 1968 despite labour s at four mines—Algoma Ore Division of The Algoma Steel Corporation, Limited; nd Ore Company Limited; and Falconbridge and Inco, both byproduct producers. eased shipments from these mines were largely offset by increased shipments from two tario's new pellet producers—Steep Rock Iron Mines Limited and the Sherman mine—of which operated at about rated capacity for the first time. The Griffith mine, which ncreased shipments, is not expected to attain rated production until 1970. Another izing factor was capacity production at the other Ontario mines—Adams mine of & Laughlin Mining Co.; Moose Mountain mine of National Steel Corporation of da Limited; and Marmoraton Mining Company, Ltd.

British Columbia shipments, at 1,700,000 tons, were down slightly from the 1968 total 00,000 tons. Shipments increased from Wesfrob Mines Limited, Texada Mines Ltd., Coast Copper Company Limited but decreased from Zeballos Iron Mines Limited n was closed in mid-year, and from Brynnor Mines Limited which continued to ship stockpile but at a reduced rate. All British Columbia shipments were consigned to n.

Exports of iron ore fell from a record 36,000,000 tons in 1968 to 27,900,000 tons in 1969, eakness being caused, of course, by inability to produce and deliver iron ore because e strikes that took place during the spring and summer when operations reach their st production rates. Exports to the United States, Britain, Italy, West Germany, Belgium and Luxembourg were all lower than in 1968, although those to the Netherlands Finland were higher. Exports to the United States, at 18,200,000 tons, accounted for c. of total shipments, and those to Britain were 2,900,000 tons, or 10 p.c. Japan and etherlands each took 2,200,000 tons, West Germany 1,200,000 tons, and Italy 1,000,000 Small tonnages went to Belgium and Luxembourg, Finland, France and the Bahamas. rend toward lower imports continued in 1969 as they declined 400,000 tons from 1968 to ,000 tons. Of the total imports, the United States provided 2,000,000 tons, or 87 p.c., ved by Brazil with 200,000 tons. Chile, Venezuela and Mauritania shipped small ges to Canada; Mauritania was a supplier for the first time.

Lead and Zinc.—Production of lead in 1969 was almost 7 p.c. less than the record of 340,200 tons in 1968, and equivalent to 12 p.c. of the non-communist world total. ary refined lead production of 187,100 tons was derived from two plants, one operated minco Ltd. at Trail, B.C., where annual capacity is 190,000 tons, and the other oper-by East Coast Smelting and Chemical Company Limited, a subsidiary of Brunswick g and Smelting Corporation Limited, at Belledune, N.B., where capacity is 33,000 tons ally. Exports of lead in ores and concentrates totalled 140,200 tons of contained lead, ared with 143,900 tons in 1968, and went mainly to the United States, Japan, West any and Belgium. Exports of refined lead amounted to 107,090 tons, 23 p.c. less than

in 1968, and went mainly to the United States and Britain. The lead price, f.o.b. To and Montreal, increased from 13.5 cents a pound at the beginning of 1969 to 16.5 ce mid-December.

Zinc production rose in 1969 to a new record of 1,196,291 tons, 3.2 p.c. more than in and equivalent to 25 p.c. of the non-communist world total. Canada has been the w largest mine producer since 1964. Refined zinc output rose from 426,700 tons in 19 466,400 tons in 1969 in response to good demand and rising zinc prices, although produ was still below capacity at three of Canada's four primary zinc plants; output at the f plant was slightly above rated capacity. Exports of zinc in ores and concentrates, tot 804,700 tons, went mainly to the United States, Belgium, West Germany and J Refined exports amounted to 307,400 tons and went mainly to the United States and Br The domestic producers' price of zinc rose by two cents a pound between January September and remained at 15.5 cents a pound for the remainder of the year.

Production of lead and zinc in the Northwest Territories, amounting to 102,50 220,000 tons, respectively, came from Pine Point Mines Limited. Pine Point c production of direct-shipping ore in December 1968 and in January 1969 its nearby S mine and 3,000-ton-a-day mill addition began operations. In the Yukon Territory, Mining Corporation Limited began tune-up operations, in September 1969, at the ton-a-day concentrator at its zinc-lead-silver property near Ross River. An incre the mill capacity of 6,600 tons daily was scheduled for early 1970.

Lead and zinc production in British Columbia was mainly from Cominco's Su mine and 10,000-ton concentrator at Kimberley. The company also operated the Bl mine and 700-ton mill in the Slocan district. Among other lead-zinc producers Western Mines Limited at Buttle Lake on Vancouver Island, and Canadian Explor Limited and Reeves MacDonald Mines Limited in southeastern British Columbia. conda Britannia Mines Ltd. produced copper and zinc concentrates at Britannia Be

Hudson Bay Mining and Smelting Co., Limited recovered lead and zinc from metal ores of three mines at or near Flin Flon on the Saskatchewan–Manitoba borde three mines near Snow Lake, Man. Its Flexar copper-zinc mine southwest of Flin began operations in April 1969, and two new mines were under development in the Lake area. Sherritt Gordon Mines, Limited planned to bring its Fox copper-zinc mi mill, 28 miles southwest of Lynn Lake, Man., into production in mid-1970 at 3,000 tons

In Ontario, Ecstall Mining Limited operated a zinc-copper-lead mine and 9,00 a-day mill near Timmins and remained Canada's largest mine producer of zinc as w Ontario's leading producer of lead. Ecstall, a subsidiary of Texas Gulf Sulphur Com is constructing, near Timmins, two plants which will initially produce about 120,00 of slab zinc metal and 230,000 tons of sulphuric acid annually. Other Timmins-d mine producers were Kam-Kotia Mines Limited and Canadian Jamieson Mines Li which operated copper-zinc mines and mills, and Jameland Mines Limited whi November 1969, began mining zinc-copper ore for custom treatment at a nearby The remainder of Ontario's lead and zinc output came principally from copper-zin mines at Manitouwadge operated by Noranda Mines Limited (Geco Division), Wi Mines Limited and Willroy Mines Limited. Selco Exploration Company Limited pl to bring into production by 1971 its copper-zinc property in the Uchi Lake area of western Ontario. Late in 1969, Mattagami Lake Mines Limited discovered a subst zinc-copper-silver-lead deposit on the south side of Sturgeon Lake in Ontario and pl to bring the property into production in 1972.

In Quebec, relatively small amounts of lead, as well as some zinc, were produced Cupra and Solbec Divisions of Sullivan Mining Group Ltd. in the Eastern Town

ining companies associated with Noranda Mines Limited accounted for about 85 p.c. ıc output in Quebec, most of the remainder coming from three mines—near Noranda, l'Or and Matagami—which operated copper-zinc mines. Late in 1969, Delbridge s Limited brought a zinc-copper mine in the Noranda area into production and trie Mining Company Ltd. was considering bringing into production in 1970 a copper-lead property adjacent to the Cupra mine.

In New Brunswick, the largest lead-zinc producer was Brunswick Mining and Smelting oration Limited, which operated mines and concentrators in the Bathurst district. r producers were Heath Steele Mines Limited, which almost doubled capacity to ,000 tons of zinc-copper-lead ores annually at its Newcastle area property, and Nigadoo Mines Limited which operated a 1,000-ton lead-zinc-copper mill in the Bathurst ct. The Anaconda Company (Canada) Ltd. and Cominco Ltd. announced that their y owned Caribou zinc-lead-copper property, about 30 miles northwest of Bathurst, d be brought into production. A 1,000-ton-a-day concentrator, to treat a relatively deposit of copper ore, was under construction with production scheduled for 1970. ond ore zone contains a much larger tonnage of lead-zinc-silver sulphides, and the bility of bringing it into production was under investigation. In Newfoundland, both and zinc concentrates were produced at the zinc-lead-copper mine of the American ting and Refining Company at Buchans.

Canada's mine production of lead and zinc in 1970 is forecast to be about 19 p.c. and , respectively, higher than 1969.

Producers' Shipments of Lead from Canadian Ores, by Province, and Total Value, 1960-69

Year	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario
	tons	tons	tons	tons	tons
	24,022	—	—	2,669	831
	21,968	—	—	3,392	835
	25,330	2,682	1,879	4,716	1,144
	23,392	1,400	1,783	4,337	1,539
	25,415	1,669	21,716	3,954	2,027
	21,916	1,841	43,654	4,213	1,943
	21,754	1,488	51,864	3,909	1,985
	19,940	397	47,016	2,882	5,529
	18,914	2,600	54,350	2,936	12,900
	21,094	2,607	56,141	1,404	12,745

Year	Manitoba	British Columbia	Yukon Territory	Northwest Territories	Canada	
					Quantity	Value
	tons	tons	tons	tons	tons	$
	1,037	166,947	10,144	—	205,650	43,926,888
	3,054	192,800	8,385	—	230,435	47,054,765
	3,792	167,641	8,145	—	215,329	42,721,341
	2,737	157,487	8,490	—	201,165	44,256,199
	1,295	134,369	10,209	3,063	203,717	54,759,110
	1,316	125,167	8,926	82,831	291,807	90,460,323
	557	105,747	7,988	105,330	300,622	89,827,072
	1,785	103,827	7,650	127,377	317,963[1]	89,029,711
	1,477	115,586	3,611	125,138	340,175[1]	91,439,162
	593	102,548	15,400	102,500	315,032[1]	95,391,671

ncludes 1,560 tons of producers' shipments from Saskatchewan in 1967 and 2,663 tons in 1968; shipments of ons from Saskatchewan in 1969 are not included in the Canada total.

12.—Producers' Shipments of Zinc, by Province, and Total Value, 1960-69

Year	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario	Manito
	tons	tons	tons	tons	tons	tons
1960	34,208	—	—	49,807	45,230	24,
1961	34,638	—	—	54,005	51,937	46,
1962	32,541	757	2,498	70,737	63,132	49,
1963	34,485	—	10,614	75,084	66,470	46,
1964	38,982	595	54,372	236,540	72,076	42,
1965	36,187	299	123,595	272,883	60,675	40,
1966	34,160	678	142,395	293,148	82,395	34,
1967	34,851	23	151,357	245,883	268,532	36,
1968	36,729	113	135,429	213,153	346,758	45,
1969p	33,905	122	158,201	195,923	349,408	48,

Year	Saskatchewan	British Columbia	Yukon Territory	Northwest Territories	Canada	
					Quantity	Valu
	tons	tons	tons	tons	tons	$
1960	42,703	203,833	6,702	—	406,873	108,635,
1961	28,360	194,486	6,069	—	416,004	104,749,
1962	30,899	206,716	5,944	—	463,144	112,080,
1963	33,320	201,432	5,925	—	473,722	121,083,
1964	28,437	200,399	6,547	3,920	684,513	193,990,
1965	27,983	158,336	6,624	94,690	822,035	248,254,
1966	28,909	152,562	5,725	189,167	964,106	291,160,
1967	28,412	131,415	4,738	209,982	1,111,453	322,099,
1968	29,012	146,098	2,653	203,915	1,159,392	326,948,
1969p	24,621	148,128	17,075	220,000	1,196,291	364,390,

Gold.—Canadian gold production in 1969 amounted to 2,502,169 oz. t. valued $94,331,773, a decline of 8.8 p.c. from 1968. The average price for gold paid by the R Canadian Mint in 1969 was $37.69 per oz. t. (Cdn.), down from $37.71 in the previous y From 1962 through 1969, the range in value for the Canadian dollar was $0.916 to $0.93 relation to the United States dollar and the corresponding Royal Canadian Mint gold p between $37.46 and $38.22 per oz. t. Canadian lode and placer gold mines continue experience serious economic difficulties with costs of recovery maintaining an upward tr Of the 34 lode gold mines operating in Canada in 1969 there was only one that did not rec assistance under the terms of the Emergency Gold Mining Assistance Act (see p. 7 Three of the 34 lode gold mines closed in 1969.

Gold produced from lode gold mines, from base metal ores and from placer m dropped 8.2 p.c., 11.1 p.c. and 17.0 p.c., respectively, below 1968 levels. The propor of gold derived from lode gold mines was 81.0 p.c. of the total output, from base m mines 18.7 p.c. and from placer mines 0.3 p.c. compared with 80.5 p.c., 19.2 p.c. and 0.3 in 1968. Ontario remained the principal producing province, accounting for 48.2 p.c the total compared with 50.3 p.c. in 1968; Quebec, the Northwest Territories and Bri Columbia accounted for 29.5 p.c., 13.7 p.c. and 4.5 p.c., respectively, compared 28.0 p.c., 12.8 p.c. and 4.5 p.c. in 1968.

In Ontario, production declined 12.6 p.c. to 1,206,110 oz. t. from 1,379,779 oz. 1968; 17 lode gold mines operated during the year compared with 20 in 1968. Gold covered as a byproduct from base metal ores was 4.7 p.c. of the provincial total. Qu production declined by 4.0 p.c. to 737,554 oz. t. from 768,068 in 1968; lode gold out was 4.5 p.c. lower. Ten gold mines operated in the province in 1969; two were clo Gold recovered as a byproduct from base metal ores represented 34.2 p.c. of the provi total compared with 33.8 p.c. in 1968.

In the Northwest Territories, production declined by 2.6 p.c. to 343,116 oz. t. f 352,306 oz. t. in 1968. Discovery Mines Limited, north of Yellowknife, closed in 1 Production is all from lode gold mines. British Columbia production amounted

,821 oz. t. compared with 124,422 oz. t. in 1968. A minor amount of gold was produced n placer deposits. Gold recovered as a byproduct from base metal ores represented 3 p.c. of the provincial total compared with 57.5 p.c. in 1968. Combined production n Manitoba and Saskatchewan amounted to 67,143 oz. t. compared with 84,125 oz. t. 1968. All gold recovered in 1969 was a byproduct of base metal production. In the kon Territory, production increased from 24,167 oz. t. in 1968 to 26,305 oz. t. in 1969. tic Gold and Silver Mines Limited contributed to production in 1969 but the mine closed he latter part of the year. Placer deposits accounted for 7,940 oz. t. of the gold produced. Newfoundland and New Brunswick, all gold was recovered as a byproduct of base metal duction.

13.—Producers' Shipments of Gold, by Province, and Total Value, 1960-69

Year	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan
	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.
.....	13,515	3	—	1,035,914	2,732,673	52,762	84,775
.....	14,429	—	—	1,054,029	2,637,720	57,747	70,784
.....	13,966	—	553	993,560	2,421,249	68,259	66,034
.....	12,318	—	1,128	917,229	2,338,854	53,084	64,813
.....	16,717	63	1,623	934,769	2,155,370	69,986	46,185
.....	23,657	—	1,659	905,380	1,946,003	67,685	46,173
.....	25,667	20	1,953	935,459	1,660,750	64,565	42,678
.....	27,258	1	1,421	835,190	1,495,385	53,945	47,895
.....	7,803	3	2,202	768,068	1,379,779	39,155	44,970
p.....	7,440	13	1,567	737,554	1,206,110	29,304	37,839

Year	Alberta	British Columbia	Yukon Territory	Northwest Territories	Canada	
					Quantity	Value
	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.	$
.....	191	212,859	78,115	418,104	4,628,911	157,151,527
.....	171	164,467	66,878	407,474	4,473,699	158,637,366
.....	186	159,492	54,805	400,292	4,178,396	156,313,794
.....	132	159,473	55,211	400,885	4,003,127	151,118,045
.....	59	139,959	57,844	412,879	3,835,454	144,788,388
.....	200	117,764	45,031	452,479	3,606,031	136,051,943
.....	182	120,705	43,466	424,029	3,319,474	125,177,364
.....	146	126,823	17,900	380,304	2,986,268	112,731,618
.....	146	124,422	24,167	352,306	2,743,021	103,439,321
p.....	100	112,821	26,305	343,116	2,502,169	94,331,773

Silver.—Canada's mine production of silver in 1969, at 43,093,000 oz. t., was about 00,000 oz. t. lower than the all-time high of 1968. The decrease was due mainly to ver byproduct output at several base metal mines in British Columbia, and at the silver-pper property of Echo Bay Mines Ltd. near Port Radium in the Northwest Territories. hough its output of 22,033,000 oz. t. was only slightly higher than in 1968, Ontario was ain the leading silver-producing province, primarily because of the substantial byproduct ver produced at the Kidd Creek base metal mine of Ecstall Mining Limited near Timmins. se metal ores continued to be the main source of Canadian output, accounting for almost p.c. of total mine production. Close to 10 p.c. came from silver-cobalt ores mined in rthern Ontario and the remainder was byproduct recovery from lode and placer gold ores.

Canadian production was valued at $83,169,443 in 1969. The $20,945,156 reduction m 1968 resulted partly from decreased output but more particularly from lower silver ices. The price of silver in Canada fluctuated in 1969 between a high of $2.178 an oz. t. d a low of $1.670. Reported consumption of silver in 1969 was 5,747,068 oz. t., some 51,290 oz. t. less than in 1968. The reduction was almost entirely accounted for by the t that no silver was used in the production of Canadian coinage; in the second half of 68, the Royal Canadian Mint changed over to pure nickel from silver alloy in the Canadian llar, 50-cent, 25-cent and 10-cent coins.

The silver refinery of Kam-Kotia Mines Limited, Refinery Division, at Cobalt, On was Canada's largest producer of refined silver. It recovered a total of 19,971,000 oz. t. the processing of silver-cobalt ores and concentrates and in the toll refining of silver bulli and coins imported from the United States. Canadian Copper Refiners Limited, Montreal East, Que., was the second largest producer, recovering 12,360,000 oz. t. refining anode and blister copper. Other producers of refined silver were Cominco Trail, B.C., (from lead and zinc ores and concentrates); Inco at Copper Cliff, Ont., (fro nickel-copper concentrates); and the Royal Canadian Mint at Ottawa, Ont., (from go bullion). At Belledune, N.B., East Coast Smelting and Chemical Company Limited r covered byproduct silver from lead-zinc concentrates treated in an Imperial Smelti Process blast furnace.

The three largest primary sources of silver in Canada in 1969 were the Kidd Cre zinc-copper-silver mine near Timmins, Ont., operated by Ecstall, the Sullivan lead-zin silver mine at Kimberley, B.C., operated by Cominco, and the silver-lead-zinc mines in t Yukon Territory, about 200 miles north of Whitehorse, operated by United Keno H Mines. Expressed as the silver content of concentrates produced, Ecstall recover 13,822,000 oz. t., Cominco 3,039,430 oz. t., and United Keno 2,405,615 oz. t. Oth important mine producers of byproduct silver, in declining order of output, included: Ec Bay Mines Ltd. near Port Radium, N.W.T.; Noranda Mines Limited (Geco Division) Manitouwadge, Ont.; Brunswick Mining and Smelting Corporation Limited near Bathur N.B.; American Smelting and Refining Company (Buchans Unit) in Newfoundland; a Inco at Copper Cliff, Ont.

Some 4,165,500 oz.t. of silver were derived from silver-cobalt ores mined in the Coba Gowganda area of northern Ontario; the largest producer was again Silverfields Mini Corporation Limited with an output of 1,143,018 oz.t.

14.—Producers' Shipments of Silver, by Province, and Total Value, 1960-69

Year	Average Price per oz.t. (Canadian funds)	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario	Manitob
	cts.	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.
1960	88.9	1,271,126	—	—	4,115,105	11,220,823	501,63
1961	94.3	1,145,105	—	—	4,315,844	8,870,402	767,54
1962	116.5	1,181,648	724,245	178,521	4,603,019	9,383,445	847,87
1963	138.4	981,005	423,189	332,472	4,441,644	9,601,621	766,97
1964	140.0	1,089,748	544,224	1,469,192	4,564,559	9,929,858	727,64
1965	140.0	1,086,978	443,630	2,745,274	5,154,403	10,822,213	707,02
1966	139.9	1,097,425	540,663	3,108,669	5,214,146	10,900,204	547,79
1967	173.2	1,073,153	89,238	3,017,416	4,659,232	14,309,391	629,31
1968	231.3	895,706	368,389	3,654,079	3,986,371	21,844,592	616,95
1969p	193.0	963,100	247,064	4,172,200	4,103,420	22,033,095	489,34

Year	Saskatchewan	British Columbia	Yukon Territory	Northwest Territories	Canada[1]	
					Quantity	Value
	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.	$
1960	1,163,845	8,447,440	7,217,361	79,473	34,016,829	30,244,36
1961	876,450	8,391,640	6,937,086	77,890	31,381,977	29,580,65
1962	762,215	6,186,937	6,482,244	72,802	30,422,972	35,442,76
1963	746,683	6,451,158	6,106,037	81,206	29,932,003	41,425,89
1964	593,320	5,280,129	5,638,712	65,223	29,902,611	41,863,65
1965	640,995	4,991,109	4,615,995	1,064,824	32,272,464	45,181,45
1966	603,358	5,548,823	4,194,580	1,662,192	33,417,874	46,751,60
1967	605,215	6,082,617	3,869,374	1,980,228	36,315,189	62,897,90
1968	695,893	7,121,250	2,077,987	3,751,563	45,012,797	104,114,59
1969p	636,906	5,431,267	2,990,056	2,026,513	43,092,976	83,169,44

[1] Includes relatively small quantities produced in Alberta.

Uranium.—Although the long-term outlook for the Canadian uranium industry ıained bright in 1969, continued efforts on the part of uranium producers to negotiate litional long-term sales met with very limited success. Moreover, it became apparent t present producers were faced with difficulties over the next two or three years due to ecline in near-term demand, a situation that resulted primarily from delays in nuclear nt construction, improvements in reactor and fuel design, and the consequent build-up nventories by reactor manufacturers and utilities. The situation was further aggra-ed by the continued restriction on United States uranium imports and by increased ıpetition in overseas markets.

Also of concern to Canadian producers was the possible United States Atomic Energy nmission's (USAEC) disposal procedure for its surplus uranium stocks and the proposed ıoval of the restriction on enrichment of foreign uranium in USAEC enrichment plants, ıouncements of which were expected to be made in 1970. However, at the end of 1969 possibility of negotiations developing between the United States and Canada concerning future exchange of other energy fuels had clouded the outcome of these issues.

Canadian uranium production in 1969 continued to come from the Elliot Lake area Ontario and the Uranium City area in northern Saskatchewan, production being shared p.c. and 20 p.c., respectively. At Elliot Lake, Denison Mines Limited operated at ›roximately two-thirds capacity and Stanrock Uranium Mines Limited continued to duce limited quantities of uranium through its leaching process. The Quirke mill, rated by Rio Algom Mines Limited, was the only production operation to work at acity in 1969. At Uranium City, Eldorado Nuclear Limited was operating at about p.c. capacity at year-end. Production from all four operations totalled 4,450 tons of nium oxide (U_3O_8) of which only 3,855 tons valued at $49,665,506 were shipped.

Sales of uranium made in 1969 were limited to three small contracts; Eldorado and Algom each reported a small contract with a Japanese utility and Rio Algom also tracted the sale of 55,500 lb. of U_3O_8 to fuel the first Japanese nuclear ship. Of some ouragement, however, was Denison's confirmation, in early 1970, of an extension to its 7 long-term contract with the Tokyo Electric Power Co. calling for an additional 16,750 s of U_3O_8 over a ten-year period commencing in 1974. In June 1969, Canada reaffirmed policy of supplying uranium for peaceful purposes only.

Despite the poor short-term demand, developments among Canadian producers tinued to reflect faith in the future of the uranium industry. In 1969, Denison continued make changes in equipment and mining methods aimed at increasing the efficiency of its derground operations; Rio Algom completed a series of tests preparatory to increasing nificantly the capacity of its Quirke mill; Eldorado prepared to sink a new internal duction shaft to develop downward extensions of its Fay orebody; development contin-l on Agnew Lake Mines Limited's deposit, 30 miles west of Sudbury, Ont.; and, finally, lorado reached a record production figure in the refining of ceramic UO_2 powder and pared to begin production of UF_6 in mid-1970, thus putting Canada in a position to ply a full range of refined uranium products.

The tempo of uranium exploration remained high in 1969 and several new areas of erest were identified. Ontario's Elliot Lake and Agnew Lake areas were again the scenes a major portion of the drilling activity in 1969. Activity was also of interest in the e Forestier–Ste Anne du Lac and Grindstone Lake areas in Quebec and the Kaipokok y and Michelin–McLean Lake areas of Labrador. Perhaps the most significant activity, wever, was in northern Saskatchewan where a uranium discovery, made by Gulf Minerals mpany in late 1968, precipitated a land acquisition rush early in 1969 involving dozens companies and millions of acres of mineral rights. By year-end, Gulf had completed 000 feet of drilling and had indicated that the deposit would likely be developed to isfy internal demands for uranium from Gulf General Atomic Inc. Despite the heavy loration activity in 1969, a decline was predicted for 1970 due largely to the temporary in the uranium market.

The uranium industry can look forward to a growing market for its product beginni in the mid-1970s. Although, at present, there is a large surplus of production capabili in the non-communist world, projected requirements exceed present capability after 197 and reach an estimated 72,000 tons of U_3O_8 a year by 1980. This will require a threefo increase in production, much of which will come from yet undiscovered deposits. Canad with only 20 p.c. of its known, low-cost, reasonably assured reserves committed, and signi cant additional potential, is in a good position to share in this growing world market.

15.—Quantity and Value of Producers' Shipments of Uranium (U_3O_8), by Province, 1960-

Year	Ontario		Saskatchewan		Northwest Territories		Canada	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	lb.	$	lb.	$	lb.	$	lb.	$
1960.....	19,793,727	211,983,533	4,624,431	48,722,961	1,077,211	9,231,698	25,495,369	269,938,
1961.....	14,970,594	151,060,610	4,310,871	44,631,014	—	—	19,281,465	195,691,
1962.....	12,805,203	118,283,081	4,053,966	39,900,588	—	—	16,859,169	158,183,
1963.....	12,770,421	102,951,146	3,932,645	33,957,973	—	—	16,703,066	136,909,
1964.....	11,805,143	63,606,944	2,765,164	19,902,485	—	—	14,570,307	83,509,
1965.....	6,825,046	47,234,892	2,060,167	15,126,485	—	—	8,885,213	62,361,
1966.....	5,875,698	42,758,135	1,987,992	11,576,652	—	—	7,863,690	54,334,
1967.....	5,450,639	41,418,268	2,025,589	11,603,668	—	—	7,476,228	53,021,
1968.....	5,361,460	39,163,777	2,040,736	13,120,803	—	—	7,402,196	52,284,
1969p.....	6,150,215	38,750,506	1,559,332	10,915,000	—	—	7,709,547	49,665,

Molybdenum.—Production of molybdenum in Canada in 1969 was 30,300,000 l valued at $52,600,000 compared with 22,500,000 lb. valued at $37,300,000 in 1968. Cana was second only to the United States among world producers of molybdenum and suppli approximately 21 p.c. of the estimated non-communist world production of 142,100,000 l About 90 p.c. of the Canadian production came from British Columbia and the remaind from Quebec.

Brenda Mines Ltd., under Noranda Mines Limited management, started initial oper tions in December 1969 on its copper-molybdenum property some 24 miles west of Kelown B.C. The new crushing and concentrating plant is equipped to handle 24,000 tons open-pit ore a day. The orebody is estimated at 177,000,000 tons averaging 0.183 p. copper and 0.049 p.c. molybdenum. British Columbia Molybdenum Limited complet a second full year of operation at its 6,000-ton-a-day mine and concentrator near Alice Ar and produced 5,567,700 lb. of molybdenite (MoS_2) concentrates. Boss Mountain Divisi of Brynnor Mines Limited in the Cariboo District of central British Columbia produc 2,342,000 lb.; ore extraction was 547,500 tons averaging 0.23 p.c. molybdenum and r covery was 92.7 p.c.

Endako Mines Ltd. produced 12,962,224 lb. of molybdenite (MoS_2) concentrates a 5,842,495 lb. of the roasted product, molybdic oxide (MoO_3). Average grade of ore mill was 0.189 p.c. molybdenite concentrates and recovery was 85.96 p.c. Concentrat throughput was 26,600 tons a day and an average of 35,400 tons of ore and waste we mined per operating day. A new larger roaster was operating at an annual capacity 9,000,000 lb. of contained molybdenum at the end of 1969. Briquette production at plant rate of 1,200 lb. an hour was expected to start in mid-1970. Proven and probable o reserves at the end of the year were 214,000,000 tons averaging 0.146 p.c. MoS_2. R Mountain Mines Limited, near Rossland in south-central British Columbia, produc 738,810 lb. of molybdenite concentrates in 1969.

Lornex Mining Corporation Ltd., managed by Rio Algom Mines Limited, proceed with construction and development, for late 1971 production, of a large copper-molybdenu

erty some 33 miles south of Ashcroft in the Highland Valley of British Columbia. orebody is estimated to contain 293,000,000 tons averaging 0.427 p.c. copper and p.c. molybdenum, and annual production is expected to be about 54,000 tons of er and 2,500,000 lb. of molybdenum. Utah Construction & Mining Co. began pre- g, for production in late 1971, a 33,000-ton-a-day copper-molybdenum mining and ng project in the northern part of Vancouver Island. Ore reserves there are estimated 30,000,000 tons averaging 0.52 p.c. copper and 0.029 p.c. molybdenum, and annual ut is expected to be about 53,000 tons of copper and 1,900,000 lb. of molybdenum. mont Mining Corp. Ltd. proceeded with development and testing on its 34-claim cop- nolybdenum property in the Highland Valley adjoining and east of Lornex. In ion, there were a number of other molybdenum and copper-molybdenum properties itish Columbia being explored and studied for production possibilities.

Molybdenum producers in Quebec produced nearly 3,000,000 lb. in 1969. They were: bdenite Corporation of Canada Limited at Lacorne; Preissac Molybdenite Mines ted and Cadillac Moly Mines in the Lake Preissac area near Val d'Or; and Gaspé Copper s, Limited, which produces byproduct molybdenum from its copper operations at lochville. Beattie-Duquesne Mines Limited converted molybdenite concentrates various producers to molybdic oxide at a roasting plant at Duparquet, and Masterloy ucts Limited produced ferro-molybdenum at its ferro-alloy plant near Ottawa, Ont.

Platinum Metals.—Production of the platinum metals in 1969, which amounted to 00 oz.t. valued at $26,449,000, was 219,791 oz.t. and $19,750,000 lower than in 1968 as ult of decreased nickel production. Canadian nickel ores contain about 0.025 oz.t. atinum metals a ton. When nickel matte is electrolytically refined, the platinoids— ium, palladium, rhodium, ruthenium, iridium and osmium—are precipitated in the olytic tanks as a sludge. The sludge is purified and sent to refineries in Britain and United States for recovery of the platinum metals.

Half of the world's output of platinum metals is from the Soviet Union and most of the inder is produced in Canada and the Republic of South Africa. World demand ined strong in 1969 and consumption in the non-communist countries exceeded mine uction. The deficit was made up by purchases from the Soviet Union.

Cadmium.—Cadmium output in 1969, expressed as the sum of refined metal and the erable cadmium content of exported zinc concentrates, was 4,368,405 lb. valued at 10,000; corresponding figures for 1968 were 5,014,965 lb. and $14,292,000. The ase of nearly 13 p.c. in the volume of output was due to the treatment of lower grade Cadmium is recovered as a byproduct during the smelting and refining of zinc ores concentrates. Most of the zinc ores in Canada carry minor quantities of the metal, in the order of ½ lb. of cadmium in each ton of ore on average, but varying from to 1½ lb. The largest production comes from the Kidd Creek mine near Timmins, followed by Pine Point Mines Limited in the Northwest Territories, Cominco in sh Columbia, Hudson Bay Mining and Smelting in Saskatchewan and Manitoba, and Noranda group of companies in Ontario, Quebec and New Brunswick. Refined cad- n is produced at the electrolytic zinc plants of Cominco at Trail, B.C., Hudson Bay ng and Smelting at Flin Flon, Man., and Canadian Electrolytic Zinc Limited at yfield, Que. East Coast Smelting and Chemical Company Limited at Belledune, which started zinc-lead smelting and byproduct recovery of cadmium in 1967, recovers ium as a zinc-cadmium sponge which is refined at Valleyfield.

Cobalt.—Canadian cobalt production in 1969 was 3,200,000 lb. valued at $6,900,000 ared with 4,030,000 lb. valued at $8,700,000 in 1968. Production was reduced by s at the Sudbury, Ont., operation of Inco, which lasted from July 10 to Nov. 17, and lconbridge operations at Sudbury from Aug. 21 to Nov. 23. Currently one of the major cobalt producing countries, Canada obtains nearly 90 p.c. of its cobalt as a by- uct of nickel-copper ores with the remainder, also a byproduct, from silver-cobalt ores.

Magnesium.—Dominion Magnesium Limited, with mine and smelter at H Station, Ont., is the only producer in Canada; smelting capacity is 12,000 tons annu Production increased to 10,485 tons in 1969 valued at $7,094,000 from 9,929 tons va at $6,182,000 in 1968 and exports of primary magnesium increased to $4,726,000 f $4,261,000. Imports of magnesium metal and alloys totalled $2,650,000. Cana consumption in 1968 was 5,654 tons, including 1,699 tons of imported metal. W production, excluding communist countries, was estimated at 216,100 tons in 1969.

Selenium and Tellurium.—Selenium production in 1969 was 710,618 lb. value $4,375,563, and was 11.8 p.c. higher than in 1968. Tellurium output was 103,777 lb. va at $671,588, 46.2 p.c. higher. These metals are recovered from the anode muds resul from electrolytic refining of copper anodes at the plants of Canadian Copper Refi Limited at Montreal East, Que., and Inco at Copper Cliff, Ont.

Columbium (Niobium) and Tantalum.—St. Lawrence Columbium and Me Corporation produced 3,059,052 lb. of columbium pentoxide (Cb_2O_5) in the year en Sept. 30, 1969, compared with 2,005,989 lb. in the corresponding period ended in 1 Production during the 1969 calendar year was 3,495,440 lb. St. Lawrence Columbiu the only Canadian producer of columbium and operates one of only two mines in the w that produce columbium in pyrochlore concentrates as a primary product; the other, la operation is near Araxa, Brazil. The demand for columbium continued to increase in 1 and St. Lawrence planned to produce 4,500,000 lb. in 1970. Published spot prices Canadian pyrochlore concentrates, f.o.b. mine site, after declining to 90–93 cents (U a pound of contained Cb_2O_5 in April 1968 and recovering to 92–98 cents (U.S.) in Decen 1968, increased to $1.00–$1.05 (U.S.) in the latter part of 1969.

Canada's first commercial production of tantalum began in 1969 at the Bernic L Man., mine of Tantalum Mining Corporation of Canada Limited. Annual production expected to be 500,000, or more, pounds of tantalum pentoxide (Ta_2O_5) with the new p operating at its rated capacity of 500 tons of ore a day. Concentrates were shipped in second half of 1969 and in September the company announced a price of $7 (U.S.) a po of Ta_2O_5 in 50 p.c. concentrates, f.o.b. mine site, for the remainder of the sales contra for delivery to the end of 1970.

Subsection 2.—Industrial Minerals

The value of industrial minerals produced in 1969, at $908,295,000, was about 2 higher than in the previous year. A pronounced drop in the value of shipments of eleme sulphur was offset by increases in structural materials and in most other non-met minerals. Developments in a number of industrial minerals during 1969 are revie below.

Asbestos.—Asbestos production in 1969 at 1,596,450 tons was only 499 tons more t in 1968 but the value of production rose about 6 p.c. to $196,759,000. Quebec accou for about 84 p.c. of Canada's total asbestos output and Newfoundland, Ontario, Bri Columbia and the Yukon Territory for the remainder. Most of the Canadian product is exported as milled fibre and shorts, providing about 70 to 75 p.c. of world exports 35 p.c. of world production. The principal markets for Canadian fibre include the Un States, West Germany, Britain and Japan.

The world outlook for asbestos consumption is favourable. A 4-p.c.-a-year incre in use is forecast and Canadian companies have been modernizing and expanding produc facilities to ensure their share of that increase. In Quebec, Canadian Johns-Manv Company, the largest company with the largest mine, continued mill expansion that sh lead to an increase in production of 100,000 tons of fibre a year; at Thetford Mines, Asbe Corporation Limited continued development of the Penhale deposit adjacent to the N mandie mine and announced plans to put its Asbestos Hill deposit in the Ungava dist

uebec into production by 1972; and Bell Asbestos Mines, Ltd., proceeded with its new t at Thetford Mines. One producer, Nicolet Asbestos Mines Ltd., closed at the end anuary 1969 because of exhaustion of ore reserves. McAdam Mining Corporation ited at Chibougamau and Abitibi Asbestos Mining Company Limited north of Amos inued exploration and diamond drilling of their respective properties.

In British Columbia, Cassiar Asbestos Corporation Limited continued expansion of ill from 75,000 to 110,000 tons of fibre a year, to be ready by 1970. The company inued production at Clinton Creek mine in the Yukon Territory and was adding mill pment there to increase output to 100,000 tons of fibre a year. Newfoundland's sole ucer, Advocate Mines Limited, had lower output in 1969 because of a strike that lasted May 22 to July 31. Ontario's asbestos production should increase in 1970 with a year's production from the Reeves mine of Johns-Manville Mining and Trading Limited from the Matheson mine of Hedman Mines Limited.

16.—Quantity and Value of Producers' Shipments of Asbestos, 1960-69

Year	Quantity	Value	Year	Quantity	Value
	tons	$		tons	$
.....	1,118,456	121,400,015	1965.....	1,388,212	146,188,473
.....	1,173,695	128,955,900	1966.....	1,489,055	163,654,863
.....	1,215,814	130,281,966	1967.....	1,452,104	165,118,786
.....	1,275,530	136,956,180	1968.....	1,595,951	185,024,662
.....	1,419,851	145,193,443	1969p.....	1,596,450	196,759,000

Potash.—Potash mining is a comparatively new development in Canada, the entire stry being centred in Saskatchewan. Significant production began in 1962 with a e of $3,000,000 and development of the industry mushroomed to the extent that, in , Canada became the world's leading producer with an output valued at $67,120,000. ut 95 p.c. of the world's potash output is for fertilizers; Canada's potash consumption is ly 8 p.c. of its output so that most of it must be exported. From 1967 to 1969, the ed States took about two thirds of Canada's potash exports, the remainder going to seas markets, chiefly Japan and Britain.

At the end of 1969, nine mines—eight using conventional mining methods and one loying solution methods—with an installed annual productive capacity of 12,000,000 of potash product (potassium chloride) were operating in Saskatchewan and a tenth was under construction for completion in 1971. The rapid growth of this industry been accompanied by serious marketing problems. For example, in 1969, the industry ated well below its productive capability, with output amounting to 6,100,000 tons of ssium chloride and sales totalling 5,700,000 tons. The marketing difficulties, involving supply, low prices and some uncertainty as to whether Canadian producers would have access to the United States market, prompted the Province of Saskatchewan to prom- te the Potash Conservation Regulations, effective Jan. 1, 1970, whereby it controls sh production and influences marketing.

Salt.—Salt production in Canada in 1969 was 4,247,000 tons, about three fourths of h was mined rock salt used primarily for snow and ice control on streets and highways for chemical manufacture, and the remainder fine vacuum salt and salt as brine for use roducing caustic soda and chlorine. There are three rock salt mines, one in Nova a and two in southwestern Ontario; fine salt evaporator plants and brining operations located in Nova Scotia, Ontario, Manitoba, Saskatchewan and Alberta. Most of sh Columbia's salt needs are met by imports of solar salt from Mexico and the San cisco Bay area.

17.—Producers' Shipments of Salt, by Province, and Total Value, 1960-69

Year	Nova Scotia	Ontario	Manitoba	Saskatchewan	Alberta	Canada	
						Quantity	Valu
	tons	tons	tons	tons	tons	tons	$
1960	163,901	3,007,599	21,925	49,064	72,431	3,314,920	19,355
1961	225,875	2,861,705	23,103	51,964	83,880	3,246,527	19,552
1962	312,519	3,155,589	25,010	54,931	90,729	3,638,778	21,927
1963	356,902	3,187,491	24,883	56,301	96,417	3,721,994	22,316
1964	448,808	3,335,683	27,744	74,952	101,411	3,988,598	23,203
1965	459,114	3,900,484	29,834	78,958	115,706	4,584,096	23,985
1966	474,981	3,782,191	27,069	84,979	122,814	4,492,034	23,846
1967	446,865	4,673,278	25,453	89,732	126,135	5,361,463	27,808
1968	473,584	4,143,759	27,120	99,480	120,381	4,864,324	31,170
1969p	424,656	3,559.845	42,200	95,000	125,469	4,247,170	29,424

Sulphur.—Canadian production of elemental sulphur in 1969 was 2,985,000 valued at $62,986,000; sulphur production in all forms including sulphur recovered smelter gases and contained in pyrites amounted to 3,646,000 tons valued at $73,319 Most of the sulphur produced is extracted as elemental sulphur from sour natural g Western Canada. Canada is now the world's largest producer of sulphur from hydroca sources and is the world's largest exporter. Exports in 1969 increased 7 p.c. over 19 reach a record 2,264,000 tons valued at $62,742,000. However, reflecting a world supply situation and an extremely competitive marketing environment, value of ex shipments decreased some 18 p.c.

For the second consecutive year, world sulphur production exceeded demand producers' stockpiles continued to build up throughout the year. This oversupply s tion may be attributed to a combination of increased output, notably in Canada and Po and slackening demand in the major sulphur-consuming industries, in particular the ferti industry which accounts for almost half of all sulphur utilized.

18.—Quantity and Value of Sulphur Produced from Smelter Gases and in Pyrite an Pyrrhotite Shipments, and of Elemental Sulphur Sales, 1960-69

Year	Sulphur in Smelter Gases		Producers' Shipments Pyrite and Pyrrhotite			Sales of Elemental Sulphur	
	Quantity[2]	Value	Gross Weight[3]	Sulphur Content	Value	Quantity	Valu
	tons	$	tons	tons	$	tons	$
1960	289,620	2,854,623	1,032,288	437,790	3,316,378	274,359	4,298
1961	277,056	2,708,110	517,258	255,376	1,830,566	394,762	7,287
1962	292,728	3,089,537	517,308	257,084	1,879,584	695,098	9,286
1963	353,243	3,488,181	476,438	235,410	1,643,629	1,249,887	13,380
1964	443,448	4,261,912	351,850	173,182	1,126,167	1,788,165	18,637
1965	444,758	4,317,362	382,177	186,960	1,285,252	2,068,394	26,394
1966	500,338	6,050,750	326,954	162,300	1,139,141	2,041,528	40,253
1967	546,491	6,701,804	377,941	182,377	1,702,516	2,499,205	68,613
1968	666,370	8,915,202	314,197	155,797	2,286,442	2,580,746	79,963
1969p	550,804	8,221,795	323,432	159,860	2,111,198	2,984,937	62,986

[1] Recovered from sour natural gas and nickel sulphide ores. [2] Includes sulphur in acid made from ro zinc sulphide concentrates at Arvida and Port Maitland. [3] From 1961, excludes pyrite and pyrrhotite to produce iron residues or sinter.

Gypsum.—Gypsum production in Canada was 6,872,000 tons in 1969. Opera in five of the six producing provinces increased over the previous year reflecting a favou situation in the building construction industry in Canada and the United States. A 70 p.c. of Canada's gypsum output is exported to the United States, most of it from N Scotia quarries, which account for 75 p.c. of total Canadian production of crude gyp

During 1969, three companies signified intentions to build gypsum products plants in e Edmonton area of Alberta and construction began on one plant at Clover Bar destined r start-up in 1970. Canadian Gypsum Company, Limited increased the production pacity of its gypsum products plant at Hagersville, Ont., by doubling the output potential one wallboard line.

19.—Producers' Shipments of Gypsum, by Province, and Total Value, 1960-69

Year	New-foundland	Nova Scotia	New Brunswick	Ontario	Mani-toba	British Columbia	Canada	
							Quantity	Value
	tons	tons	tons	tons	tons	tons	tons	$
60.....	34,346	4,490,427	90,892	355,603	122,063	112,400	5,205,731	9,498,711
61.....	40,699	4,113,188	85,330	425,287	122,233	153,300	4,940,037	7,750,748
62.....	83,992	4,451,072	91,835	435,140	122,870	147,900	5,332,809	9,349,775
63.....	232,259	4,910,536	80,544	439,206	131,767	160,954	5,955,266	11,237,952
64.....	331,990	5,097,232	104,100	517,239	121,555	188,569	6,360,685	11,523,937
65.....	442,655	4,862,485	101,012	531,918	159,854	207,705	6,305,629	12,533,384
66.....	459,685	4,502,836	108,207	565,185	134,225	206,026	5,976,164	12,312,220
67.....	439,156	3,757,329	88,641	536,375	133,897	219,986	5,175,384	11,348,351
68.....	435,231	4,441,080	84,668	570,715	151,872	243,374	5,926,940	11,825,382
69p.....	490,000	5,211,548	82,423	630,000	180,000	278,000	6,871,971	13,433,102

Nepheline Syenite.—Nepheline syenite was first produced in 1936 and, until recently hen Norway started production, remained a uniquely Canadian mineral commodity. Nepheline syenite" is a rock name that applies to a mixture of minerals, essentially the ldspars and nepheline. The presence of nepheline provides the mixture with a higher ntent of alumina (Al_2O_3) than has either soda or potash feldspar and makes nepheline enite more desirable than feldspar in certain applications, especially in the manufacture glass, for which about 75 p.c. of the output is used. However, markets for finely ground aterial, used in the manufacture of whitewares, such as bathroom fixtures, china, oven-are, electrical porcelain and ceramic artware, are growing rapidly. Very finely ground aterial is being increasingly used as a filler material in plastics, foam rubber, and paints. ow-grade material is sold in bulk for use in the manufacture of fibreglass and for glazing brick and tile.

Production originates from two mines in Canada, both located in Ontario on Blue ountain, some 25 miles northeast of Peterborough. The deposit is pear-shaped, approxi-ately five miles in length and up to one and a half miles in width. Reserves are very large. 1969, production reached an all-time high of 502,893 tons valued at $5,882,000, represent-g an increase in tonnage of 18 p.c. over the previous year. Some 80 p.c. is exported, most it going to the United States for use in glass manufacture. In 1969, exports increased out 22 p.c. to reach 395,613 tons valued at $5,120,000.

20.—Production and Exports of Nepheline Syenite, 1960-69

Year	Production		Exports	
	Quantity	Value	Quantity	Value
	tons	$	tons	$
60.....	240,636	2,891,095	193,298	2,373,354
61.....	240,320	2,572,169	194,598	2,249,348
62.....	254,418	2,605,421	193,658	2,210,834
63.....	254,000	2,699,202	203,262	2,213,942
64.....	290,300	3,097,172	226,971	2,630,185
65.....	339,982	3,415,387	247,200	2,968,702
66.....	366,696	4,109,744	263,624	3,098,000
67.....	401,601	4,752,875	307,613	3,532,000
68.....	426,595	4,738,008	323,182	4,090,000
69p.....	502,893	5,881,818	395,613	5,120,000

Structural Materials

The value of all construction undertaken in Canada in 1969 was estimated to $13,000,000,000, and that of the production of structural materials, including cement, sa and gravel, stone, clay products and lime, was estimated at $461,206,000. The latter w about 10 p.c. of the total value of all mineral production and represented an increase 4.0 p.c. over the 1968 total.

Cement.—There were 8,543,622 tons of cement produced in Canada in 1969, rep senting an increase of 5 p.c. over 1968. Although this quantity was slightly under t peak output attained in 1966, its value, at $171,258,000, was the highest on record a constituted 3.6 p.c. of the value of all mineral production in Canada. Cement is produc in all provinces except Prince Edward Island but, of the total 1969 quantity, 66.2 p.c. w produced in Ontario and Quebec. The productive capacity of the Canadian cem industry in 1969 was 14,800,000 tons a year, which included the output of the new Bowma ville plant of St. Mary's Cement Co. Limited whose first shipments were made in Janua Quebec's capacity will be increased in 1970 by the addition, by Independent Cement In at Joliette, of two new kilns, each capable of providing 220,000 tons a year.

21.—Producers' Shipments and Value, Imports, Exports and Apparent Consumption of Cement, 1960-69

NOTE.—Many of these figures from 1960 to 1967 have been revised since the publication of the 1969 Year Book

Year	Shipments (sold or used)		Imports[1]	Exports	Apparent Consumpti
	tons	$	tons	tons	tons
1960	5,787,225	93,261,473	22,478	181,117	5,628,58
1961	6,205,948	103,923,644	29,217	249,377	5,985,78
1962	6,878,729	113,233,726	26,525	219,164	6,686,09
1963	7,013,662	118,614,929	31,579	272,803	6,772,43
1964	7,847,384	130,704,220	32,680	297,669	7,582,39
1965	8,427,702	142,523,169	37,619	334,887	8,130,43
1966	8,930,552	156,300,622	50,615	407,395	8,573,77
1967	7,994,954	143,150,284	44,118	328,018	7,711,05
1968	8,165,805	152,003,739	51,500	366,506	7,850,79
1969[p]	8,543,622	171,257,887	53,396	634,208	7,962,81

[1] Standard portland cement. [2] Shipments plus imports less exports.

Sand and Gravel.—The principal uses for sand and gravel are as aggregate in concre for building and engineering construction and as fill in road construction. Gravel in bould sizes is used for rip-rap fill and sometimes for armour-stone construction; the normal scalpe over-size material is crushed to provide gravel and crusher-run fines. Lithologically, sa and gravel deposits are usually composed of material similar to the rock types in which t deposits are found; infrequently, deposits are composed of materials that have been tran ported some distance from their origin. Exploitation of these low-value-per-ton materia is greatly influenced by the physical characteristics of the sand or gravel, by the locatio of the deposit with respect to suitable markets and, of great importance, by the specific tions established to differentiate quality products.

22.—Producers' Shipments of Sand and Gravel, by Province, and Total Value, 1960-69

Year	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
	tons	tons	tons	tons	tons	tons
60	3,912,533	474,184	8,717,693	6,184,924	46,255,963	77,660,833
61	3,383,724	544,497	5,574,377	5,014,234	44,126,199	70,208,199
62	4,250,942	531,196	4,375,842	5,128,365	44,000,000	76,600,813
63	4,640,993	629,475	6,633,581	4,417,611	42,375,911	80,259,750
64	4,657,737	608,923	6,562,341	4,699,626	44,500,000	76,917,396
65	4,258,678	412,064	6,638,138	4,569,025	45,101,021	88,564,687
66	3,599,421	660,726[r]	8,109,366	5,367,393	45,876,782	94,123,982
67	3,143,938	1,327,600	6,056,265	7,604,962	45,012,646[r]	94,751,250
68	3,812,003	383,165	9,380,262	6,361,658	42,955,933	84,095,642
69[p]	3,600,000	770,000	8,520,000	3,800,000	43,000,000	85,000,000

Year	Manitoba	Saskatchewan	Alberta	British Columbia	Canada	
					Quantity	Value
	tons	tons	tons	tons	tons	$
60	10,860,566	8,952,539	13,385,970	15,669,293	192,074,498	111,163,886
61	7,402,385	7,626,197	12,591,944	14,279,191	170,750,947	104,654,132
62	9,692,025	5,317,336	13,469,848	17,879,395	181,245,762	118,603,283
63	9,653,471	7,368,017	16,139,744	17,451,950	189,570,503	123,854,254
64	9,871,883	9,266,648	16,777,687	19,929,117	193,791,358	125,232,132
65	10,462,840	8,808,104	14,377,337	22,068,370	205,260,264	133,819,824
66	9,675,796	8,314,360	12,886,213	24,295,400	212,909,439[r]	149,826,435[r]
67	10,289,157	9,671,401	14,187,340	23,168,141	215,212,700[r]	146,697,783[r]
68	9,563,927	9,167,702	13,600,098	25,914,119	205,234,509	129,500,553
69[p]	9,500,000	8,500,000	13,700,000	27,670,000	204,060,000	130,650,000

Stone.—The stone industry includes those companies producing dimension stone, namental stone, crushed stone, whiting, and stone for metallurgical and chemical use. imension stone products account for less than 1 p.c. of the total volume of stone production d over 11 p.c. of the total value. Crushed stone products, consisting of materials used r concrete aggregate, railway ballast, road metal, rubble and rip-rap, terrazzo, stucco and tificial stone, etc., account for about 80 p.c. of the total volume; the remainder is used the chemical and allied industries.

23.—Producers' Shipments of Stone,[1] by Province, and Total Value, 1960-69

Year	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec
	tons	tons	tons	tons	tons
60	380,843	750,000	914,937	1,883,867	20,394,509
61	322,820	225,000	1,021,880	2,957,886	22,648,010
62	227,707	225,000	548,834	2,950,906	24,173,016
63	382,260	225,000	457,525	4,416,799	30,003,825
64	285,357	350,000	504,434	3,058,061	37,805,163
65	174,985	225,306	429,078	2,139,517	44,159,242
66	153,000	200,000	605,458	3,544,301	57,976,286[r]
67	240,000	725,383	585,015	3,265,148	47,764,482[r]
68	876,768	439,775	819,788	2,137,748	34,952,128
69[p]	705,000	150,000	825,300	1,730,000	33,230,000

[1] Excludes limestone used to make lime or cement.

23.—Producers' Shipments of Stone,[1] by Province, and Total Value, 1960-69—concluded

Year	Ontario	Manitoba	Alberta	British Columbia	Canada	
					Quantity	Value
	tons	tons	tons	tons	tons	$
1960	17,938,583	673,598	167,201	2,255,911	45,359,449	60,640,62
1961	18,361,843	594,921	96,753	2,709,691	48,938,804	66,567,6
1962	18,797,648	943,765	105,695	2,580,914	50,553,485	68,866,3
1963	20,402,614	3,693,144	138,894	2,935,268	62,655,329	79,883,41
1964	23,845,993	1,035,248	129,364	2,780,738	69,794,358	86,882,6
1965	24,659,053	970,536	167,782	3,832,606	76,758,105	94,847,02
1966	25,702,843	2,022,876	144,433	3,537,321	93,886,518r	112,020,6
1967	25,744,989	2,012,973	141,509	3,527,809	84,007,308r	103,888,27
1968	28,636,257	2,305,900	220,523	5,550,880	75,939,767	95,658,07
1969p	25,749,000	2,212,000	25,300	5,442,500	70,069,100	88,194,5

[1] Excludes limestone used to make lime or cement.

Clay Products.—Common clays and shales occur in most regions of Canada and a the principal raw materials used for brick and tile manufacture. Deposits of high-qual argillaceous materials used for such products as papers, refractories, high-quality whi wares and stoneware products are relatively scarce in Canada. Consequently, china cl (kaolin), fire clay, ball clay and stoneware clay are mostly imported. The value of produ tion of clay products from domestic clays reached a record $50,995,000 in 1969.

Table **24** refers to production of such products as brick and tile made from domes clays. Imports of these products, mainly from the United States, have a low total val Other clay products such as floor and wall tile, sanitary ware, pottery and dinnerware, a electrical porcelain contain a large proportion of china clay and ball clay. The value whiteware products produced in Canada from such materials approached $40,000,0 in 1968.

24.—Value (Total Sales) of Producers' Shipments of Clay Products made from Domes Clays, by Province, 1960-69

Year	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario
	$	$	$	$	$
1960	83,435	1,673,618	705,366	8,093,038	20,191,32
1961	75,890	1,582,153	744,293	8,195,790	19,036,55
1962	142,000	1,712,503	822,400	7,450,131	20,146,78
1963	92,120	1,337,430	623,166	6,852,660	21,819,68
1964	99,038	1,541,117	697,974	6,839,772	23,723,51
1965	72,717	1,828,385	667,704	6,520,653	25,130,70
1966	172,700	1,525,004	618,651	6,278,308	25,799,66
1967	199,570	1,390,252	566,500	5,611,049	27,450,94
1968	152,200	1,506,061	630,000	5,888,566	30,629,36
1969p	145,000	1,568,000	620,000	7,415,098	31,213,40

Year	Manitoba	Saskatchewan	Alberta	British Columbia	Canada
	$	$	$	$	$
1960	813,135	1,130,332	3,551,682	1,984,607	38,226,53
1961	623,966	1,115,474	3,517,473	2,091,353	36,982,94
1962	621,275	1,354,635	3,445,687	2,121,461	37,816,87
1963	594,072	1,044,721	3,452,835	2,337,603	38,154,29
1964	519,726	1,336,383	3,787,609	2,285,454	40,830,58
1965	482,620	1,380,916	3,555,006	3,198,872	42,837,58
1966	487,172	1,395,489	3,422,614	3,256,480	42,956,08
1967	526,405	1,158,495	4,117,469	3,336,145	44,356,82
1968	451,358	1,454,597	4,424,543	3,584,757	48,721,44
1969p	448,719	1,628,893	3,839,766	4,116,475	50,995,35

Subsection 3.—Petroleum and Natural Gas

The Canadian petroleum industry in 1969 was highlighted by the widespread distribution of drilling operations and record production levels. Exploratory drilling was not only maintained at a high level in the traditional inland areas but was accelerated in Canada's frontier regions as Northern Canada continued to dominate the exploration picture. Panarctic Oils Limited, the government-industry syndicate, was rewarded with an initial success when the third well of their comprehensive drilling program in the arctic islands encountered an extensive condensate-bearing gas reservoir on Melville Island. The epic voyage of the United States tanker S.S. *Manhattan* through the arctic seas to Alaska in 1969 proved that it is physically possible for large tankers to operate in arctic waters. The successful adaptation of this method of transport or of the pipeline method to northern regions will undoubtedly have a critical bearing on the development of potential oil resources in Canada's arctic islands.

Strong demand for Canadian oil and gas in United States markets contributed significantly to the production gains of 1969. Total production of all liquid hydrocarbons—crude oil plus natural gas liquids—increased by almost 9 p.c. to 1,306,000 bbl. daily. Net production of crude oil averaged 1,119,000 bbl. a day and field and gas-plant production of natural gas liquids reached 187,000 bbl. a day. Alberta production, at 793,000 bbl. a day, accounted for 71 p.c. of the total Canadian crude oil output, 3 p.c. greater than in 1968. Production also increased in British Columbia, Manitoba, Ontario and the Northwest Territories but declined appreciably in Saskatchewan.

25.—Quantity and Value of Production[1] of Crude Petroleum, by Province, 1960-69

NOTE.—Figures from 1961 to 1967 have been revised since the publication of the 1969 Year Book.

Year	New Brunswick		Ontario		Manitoba		Saskatchewan	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	bbl.	$	bbl.	$	bbl.	$	bbl.	$
1960...	14,148	19,807	1,005,030	3,150,065	4,764,045	10,690,384	51,908,428	103,957,009
1961...	12,024	14,429	1,149,087	3,546,772	4,480,348	10,156,053	55,859,519	115,657,134
1962...	10,333	14,466	1,134,534	3,661,141	3,926,683	9,435,819	64,432,411	141,680,428
1963...	7,391	10,347	1,205,376	3,840,000	3,771,023	9,176,784	71,302,572	160,273,921
1964...	4,688	6,516	1,246,682	4,014,316	4,417,224	10,296,549	81,404,430	186,880,150
1965...	4,103	5,744	1,279,162	4,093,318	4,946,509	11,530,305	87,788,935	200,992,767
1966...	6,853	9,591	1,323,781	4,230,278	5,230,712	13,057,426	93,218,119	211,797,159
1967...	8,837	12,372	1,240,159	3,523,664	5,585,141	13,998,039	92,534,900	211,721,868
1968...	7,648	10,707	1,150,779	3,166,826	6,204,920	15,569,882	91,889,243	206,942,845
1969p..	8,936	12,510	1,177,139	3,239,357	6,189,638	15,511,307	89,492,907	201,546,081

	Alberta		British Columbia		Northwest Territories		Canada	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	bbl.	$	bbl.	$	bbl.	$	bbl.	$
1960...	130,506,968	302,841,423	867,057	1,626,590	468,545	641,219	189,534,221	422,926,497
1961...	161,089,334	380,170,828	1,017,826[2]	1,939,570	514,779	727,074	224,122,917	512,211,860
1962...	172,183,576	391,907,037	8,914,220[2]	16,871,944	597,693	788,955	251,199,450	564,359,790
1963...	171,381,728	433,126,186	12,528,681	24,838,110	610,567	613,620	260,807,338	631,878,968
1964...	176,183,758	451,241,841	11,551,704	23,446,494	608,557	455,201	275,417 043	676,341,067
1965...	184,155,669	473,132,745	13,502,539	28,592,977	644,998	614,941	292,321,915	718,962,797
1966...	203,339,433	522,989,385	16,680,707	36,360,605	749,654	861,945	320,549,259	789,306,389
1967...	231,543,449	591,023,631	19,697,369	44,841,061	677,937	870,810	351,287,792	865,991,445
1968...	257,186,578	660,485,368	22,205,516	50,205,117	751,592	906,871	379,396,276	937,287,616
1969p..	284,241,338	731,121,266	25,569,776	57,811,474	818,943	988,137	407,498,677	1,010,230,132

[1] Gross production of crude oil and condensate, less returned to formation. [2] Excludes condensate.

26.—Natural Gas Production,[1] by Province, and Total Value, 1961-69

NOTE.—Figures from 1961 to 1967 have been revised since the publication of the 1969 Year Book.

Year	New Brunswick		Quebec		Ontario		Saskatchewan	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	Mcf.	$	Mcf.	$	Mcf.	$	Mcf.	$
1961.....	96,318	143,215	—	—	14,544,165	5,614,048	36,486,690	3,391,61
1962.....	95,750	134,476	—	—	15,648,294	5,802,387	37,786,716	3,781,88
1963.....	103,522	109,520	—	—	15,920,055	6,049,621	38,647,251	4,078,42
1964.....	105,055	112,303	—	—	13,815,967	5,254,212	39,573,996	4,389,43
1965.....	105,359	105,609	—	—	12,699,483	5,798,330	42,734,910	5,030,27
1966.....	97,403	89,913	—	—	15,537,395	5,939,946	49,867,762	6,122,52
1967.....	103,877	88,002	59,130	8,870	14,228,759	5,431,117	49,975,781	6,638,20
1968.....	112,967	96,878	137,573	20,636	11,974,385	4,598,927	56,771,626	7,302,52
1969P....	107,969	92,592	135,569	20,335	11,409,133	4,381,792	56,167,413	7,209,72

Year	Alberta		British Columbia		Northwest Territories		Canada	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	Mcf.	$	Mcf.	$	Mcf.	$	Mcf.	$
1961.....	480,592,018	53,830,194	102,369,800	9,026,653	41,678	17,326	634,130,669	72,023,04
1962.....	720,644,946	83,462,142	120,439,219	10,856,131	56,689	23,510	894,671,614	104,060,53
1963.....	821,247,938	102,779,083	117,422,069	11,420,250	47,656	21,330	993,388,491	124,458,23
1964.....	946,473,793	122,698,494	134,207,548	13,188,690	34,341	14,405	1,134,210,700	145,657,53
1965.....	1,023,294,574	132,055,946	157,920,967	15,930,215	43,068	18,088	1,236,798,361	158,938,46
1966.....	1,090,691,124	146,609,428	185,591,319	19,402,660	46,238	19,522	1,341,831,241	178,183,99
1967.....	1,181,927,668	161,807,336	225,399,348	23,992,783	40,589	17,137	1,471,735,152	197,983,45
1968.....	1,363,394,712	185,356,207	259,866,922	27,875,502	42,602	17,979	1,692,300,787	225,268,65
1969P....	1,609,325,945	218,791,048	308,083,938	33,047,665	50,784	21,432	1,985,280,751	263,564,59

[1] Gross production, less field flared and waste, injected and stored.

Total liquid hydrocarbon reserves increased by 498,000,000 bbl. to 10,500,000,000 bbl., comprised of 8,620,000,000 bbl. of crude oil and 1,896,000,000 bbl. of natural gas liquids. The bulk of the reserve growth was attributable to the introduction of secondary recovery schemes and a large increase in natural gas liquid reserves rather than to the discovery of new oil fields. As in previous years, Alberta contributed the major additions to reserves and in 1969 had more than 89 p.c. of the total proved hydrocarbon reserves in Canada.

Net new production of natural gas rose 16.9 p.c. to 5,430,000 Mcf. daily in 1969 in response to the buoyant demand in domestic and export markets. Proved remaining marketable reserves rose 8.9 p.c. to 51,950,995,000 Mcf. in 1969, the second largest increase since 1955.

Exports of crude oil and products to the United States increased to 595,000 bbl. a day in 1969 with an estimated well-head value of $579,179,000. Although exports reached record proportions, imports of crude oil and products still exceeded exports by 136,000 bbl. a day, for a daily average of 731,000 bbl.

Alberta.—Although exploratory drilling was maintained at a high level in Alberta during 1969, there were no significant oil discoveries made in the province. There has not been a major oil find in Alberta since the Rainbow Lake field was discovered in 1965; nevertheless, oil-field development remained at about the same level in most areas of the province in 1969 as in the previous year.

Encouraged by a rapidly rising export demand for natural gas, the search for gas reserves accelerated during 1969. Most of the activity was concentrated in the Rocky Mountain foothills of Alberta where major gas discoveries were made in isolated Devonian Leduc reefs near Strachan and Ricinus in 1967 and 1968. Further exploratory drilling in this area in 1969 resulted in the discovery of at least two more thick, "wet" gas-bearing Leduc reefs. Although the primary objective in the Strachan–Ricinus trend has been Devonian reefs, several of these deep tests have encountered commercial thicknesses of oil- and gas-bearing Cardium sandstone at shallower depths. The results of this drilling have not only added substantially to provincial reserves of gas and oil but have also focused the industry's attention on the potential of the relatively unexplored foothill belt.

In 1969, the Alberta Government granted Syncrude Canada Ltd. permission to proceed with construction of its proposed Athabasca tar-sand extraction plant near Fort McMurray, to cost $190,000,000. Syncrude is owned jointly by Atlantic Richfield Company, Cities Service Athabasca Inc., Imperial Oil Limited and Royalite Oil Co. Ltd. Syncrude's application called for a daily production of 50,000 bbl. of synthetic crude oil, 25,000 bbl. of specialty oils and 5,000 bbl. of naphtha. In its application, Syncrude agreed to delay start-up time until 1976 from an initial target of 1972-73 in order to gain time in assessing the potential impact that future Prudhoe Bay production would have on prospective markets in the United States.

The total number of wells drilled in 1969 was 1,843, five fewer than in 1968. Total footage drilled was 8,596,021 feet, development footage 3,737,169 and exploratory drilling 4,858,852 feet, little changed from the preceding year.

Saskatchewan.—Saskatchewan experienced an upsurge in both exploratory and development drilling in 1969 but the results in terms of additions to reserves were disappointing. Exploratory drilling at 624 wells and 1,923,654 feet increased 10 p.c. and development footage at 538 wells and 1,728,425 feet was up 12 p.c. The exploratory venture undertaken by Pheasant Exploration Ltd. to assess the unexplored subsurface areas of the Middle Devonian Winnipegosis formation was abandoned after 48 dry holes had been drilled. Other deep-hole drilling projects also proved unsuccessful.

British Columbia.—Total footage drilled in British Columbia decreased from 1968 by 19 p.c. to 847,883 feet as a slight increase in development drilling was more than offset by a sharp reduction in exploratory drilling. The lack of significant oil finds in recent years apparently has begun to have a detrimental effect on exploration effort. In the offshore areas, Shell completed its drilling program off the West Coast after drilling 14 wells. Drilling extended from off Pachena Point, Vancouver Island, to the northeastern coast of Queen Charlotte Island and although traces of oil and gas were encountered, commercial production was not indicated. A test-well drilled in the Bowser Basin of the northwestern interior of British Columbia was suspended after encountering gas shows at a depth of about 3,000 feet. Further production-testing was contemplated for this well in 1970.

Manitoba.—Aggregate drilling footage declined 9 p.c. in Manitoba during 1969 to 146,000 feet. Exploratory drilling footage increased 31 p.c. to 82,629 feet and although there was a notable increase in the number of wells drilled during the year, all were unsuccessful. Development drilling declined 37 p.c. to 63,318 feet, reflecting not only the lack of new discoveries but also pointing up the fact that the established fields have very nearly reached their maximum development.

Yukon Territory, Northwest Territories and Arctic Islands.—Exploration activity continued to increase in Canada's Arctic in 1969 and drilling results have confirmed both industry's and government's assessment of the potential of Northern Canada. Panarctic Oils Limited, the industry–government combine which is exploring for oil in Canada's arctic islands, has committed a minimum of $30,000,000 toward the drilling of 17-20 exploratory wells. By the end of 1969, three wells in this program had been drilled, one of which dis-

covered very large potential reserves of natural gas at Drake Point on Melville Island. Panarctic plans on drilling at least one more well on Melville Island in the future. By the end of the year a third rig had been brought in to commence drilling on Ellef Ringnes Island to test a very large salt dome structure.

Exploration activity was also accelerated in the Mackenzie Delta region of Northern Canada and early in 1970 exploratory drilling was rewarded by a discovery made by the well I.O.E. Atkinson H-25 in the Northwest Territories, 50 miles northeast of Tuktoyaktuk. Preliminary indications are that the discovery is a substantial one and when the limited amount of drilling that has been done in the Mackenzie River Delta is taken into consideration, it is apparent that the discovery has major implications for future prospects.

Total footage drilled, all exploratory, more than doubled in 1969 to 56 wells (274,401 feet) from 33 wells (118,774 feet) in 1968.

Eastern Canada.—In Ontario, a sharp decrease in development drilling was more than offset by a major gain in exploratory drilling with the result that over-all drilling footage increased by 37 p.c. in 1969. The advance in exploratory drilling was due primarily to an increase in drilling operations in Lake Erie combined with an increased emphasis on Silurian reef exploration in Lambton County. A well drilled near the Kimball–Colinville field encountered oil in a Silurian reef and was the most significant discovery made in Eastern Canada during the year.

In the offshore areas, Shell Canada Limited has embarked on a two-year drilling program off the coast of Nova Scotia and by year-end had completed one well south of Sable Island and had commenced drilling a second well farther south; the first well was abandoned at a depth of 13,085 feet after encountering several minor indications of oil and gas. The first well in Hudson Bay was drilled in 1969 from a specially reinforced drilling vessel located about 250 miles east of Churchill, Man. Because of potentially hazardous ice conditions, the well was terminated at a depth of 3,926 feet, considerably short of a projected depth of 6,000 feet, after encountering indications of oil and gas in separate horizons.

Petroleum Refining and Marketing.—Daily crude oil refining capacity continues to increase year by year, the total in 1969 reaching 1,297,850 bbl. Canada ranks ninth in the world in terms of crude treating capacity and is unquestionably one of the most advanced countries in terms of down-stream refinery units such as catalytic cracking and catalytic reforming.

27.—Crude Oil Refining Capacity, by Region, as at Jan. 1, 1967-69

Region	1967		1968		1969	
	bbl./day	p.c.	bbl./day	p.c.	bbl./day	p.c.
Atlantic Provinces	128,500	10.6	128,100	10.5	132,600	10.2
Quebec	401,200	33.2	400,400	32.8	449,600	34.6
Ontario	352,400	29.1	359,100	29.4	367,000	28.3
Prairie Provinces and Northwest Territories	217,450	18.0	222,150	18.1	236,950	18.3
British Columbia	109,900	9.1	112,400	9.2	111,700	8.6
Canada	**1,209,450**	**100.0**	**1,222,150**	**100.0**	**1,297,850**	**100.0**

In 1969, Canadian refineries received 1,185,000 bbl. of crude oil, of which amount domestic oil accounted for 56 p.c. Imported crude, on an average daily basis, amounted to 522,000 bbl. with 346,000 bbl. coming from Venezuela, 45,000 from Iran, 33,000 from Saudi Arabia, 26,000 from the Trucial States, 22,000 from Nigeria, 14,000 from Iraq, 12,000 from Kuwait, 11,000 from Libya, 7,000 from Trinidad, 5,000 from Colombia, and 1,000 from the United States. Imports of refined products decreased to 203,000 bbl. daily, a loss of 1,000 bbl. daily over the 204,000 bbl. for 1968. Light and heavy fuel oil and diesel oil were the major categories of imports.

28.—Domestic and Foreign Crude Oil Received at Canadian Refineries, by Region, 1967-69

Region	1967		1968		1969	
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
	bbl./day	bbl./day	bbl./day	bbl./day	bbl./day	bbl./day
ntic Provinces and Quebec	13	445,666	—	487,460	—	520,689
ario	309,964	1,157	328,804	1,288	340,727	1,155
rie Provinces and Northwest erritories	202,659	—	206,301	—	215,695	—
ish Columbia	102,053	—	111,214	—	106,531	—
Canada	**614,689**	**446,823**	**646,319**	**488,748**	**662,953**	**521,844**

Domestic demand in 1969 was made up of 1,314,000 bbl. daily of sales to consumers and 000 bbl. daily used in the petroleum industry, a total of 1,404,000 bbl. daily compared h the 1968 level of 1,347,000 bbl. Exports of crude oil, all to the United States, averaged ,000 bbl. daily and refinery product exports amounted to 11,298 bbl. daily.

Natural Gas Processing and Marketing.—Natural gas consumers and gas pipeline mpanies require gas that contains relatively little non-flammable content and is free of xious components. Since a large proportion of gas produced in Canada does not meet rket specifications, there is a major gas processing industry located mainly in Alberta ich extracts ingredients that, in themselves, are valuable. These byproducts include opane, butanes, pentanes plus and elemental sulphur. At the end of 1969 there were 137 s plants operating in Canada—122 in Alberta, four in British Columbia, seven in Saskat- ewan and four in Ontario. The addition in 1969 of 619,000 Mcf. daily of raw gas treating pacity raised the total to 8,896,000 Mcf. daily.

Of the 2,202,000,000 Mcf. of Canadian gas plus imports of 34,900,000 Mcf. available consumption in 1969, 680,100,000 Mcf. went to the United States, 844,700,000 Mcf. was d to residential, commercial and industrial consumers in Canada, and the remainder was ed by the industry in pipeline, field or plant use. In total, 1,027,200,000 Mcf. of gas s consumed in Canada compared with 917,100,000 Mcf. in 1968.

Table **29** shows sales of natural gas in Canada as well as the number of customers. ring 1969, natural gas supplied roughly 22 p.c. of Canada's energy requirements.

29.—Sales of Natural Gas in Canada, by Province 1969, with Totals for 1965-69

Province	Sales		Value per Mcf.	Customers Dec. 31
	Quantity	Value		
	Mcf.	$	$	No.
w Brunswick	58,825	169,798	2.89	1,735
ebec	50,795,804	46,080,301	0.91	217,700
ario	351,460,938	282,888,753	0.80	803,866
nitoba	47,398,425	29,703,799	0.63	124,192
katchewan	78,843,108	37,489,316	0.48	143,313
erta	226,807,144	71,018,375	0.31	306,824
tish Columbia	89,349,141	69,897,722	0.78	239,051
Canada, 1969	**844,713,385**	**537,248,064**	**0.64**	**1,836,681**
1968	**766,004,594**	**490,112,130**	**0.64**	**1,767,010**
1967	**695,106,183**[r]	**455,510,363**	**0.66**	**1,678,543**
1966	**635,514,622**	**416,212,202**	**0.65**	**1,626,783**
1965	**573,016,223**	**369,306,826**	**0.64**	**1,569,538**

Subsection 4.—Coal

The Canadian coal industry in 1969 was marked by expansion of the mining ventur in Western Canada and contraction of the established producers in the eastern provinc A dramatic revival of the western Canadian coal industry commenced in April 197 when the first large-scale shipments of coking coal moved from Alberta and British Columb mines to West Coast shipping terminals and on to Japan. In early 1970, three coal co panies—Kaiser Resources Ltd., Cardinal River Coals Ltd. and McIntyre Coal Mines Ltd. began full-scale production. Six Western Canada coal companies have so far contracted supply the Japanese steel industry by 1990 with over 180,000,000 long tons of coking co having an established f.o.b. West Coast value of $2,500,000,000. Thus far, all the expa sion in Western Canada is based on the demand by the Japanese iron and steel indust for high-quality coking coal of which Canada has large resources, but Canada is in a positio in view of the present world shortage of coking coal, to supply not only Japan but oth domestic and world markets as well.

As summarized in Tables **30, 31** and **32**, coal production in 1969 was below that 1968 as a result of decreases in Nova Scotia, New Brunswick and Saskatchewan. Sma increases were again reported for production of subbituminous coal in Alberta and bitu minous coal in both Alberta and British Columbia. Exports, principally to Japan, we about 1,380,000 tons, slightly below 1968 exports due to labour disputes on the West Coas About 17,300,000 tons of bituminous coal were imported from the eastern United Stat for Ontario and Quebec consumers. Approximately 12,000,000 tons or 45 p.c. of t 26,300,000 tons of coal consumed in Canada in 1969 were used to generate electricity. F the same period, 6,900,000 tons of bituminous coal were carbonized to produce 5,000,0 tons of coke. The thermal-electric power industry and the iron and steel industries a the two largest groups of industrial consumers of coal in Canada. The average number employees in the Canadian coal industry continued to decrease to 7,436; output per man-da from surface mines was 46.5 tons and from underground mines 3.5 tons.

A large face-loading shovel filling a 200-ton off-highway mining truck at a coal mining operation in British Columbia. Four to six passes of the huge shovel will load the truck, the size of which is indicated by the man in the foreground.

30.—Coal Production, by Province, and Total Value, 1960-69

Year	Nova Scotia	New Brunswick	Saskatchewan	Alberta	British Columbia	Yukon Territory	Canada[1]	
							Quantity	Value
	tons	tons	tons	tons	tons	tons	tons	$
.....	4,571,823	1,031,791	2,158,200	2,224,242	783,777	6,500	10,776,333	74,879,284
.....	4,303,897	892,473	2,262,049	1,991,008	878,649	7,703	10,335,779	70,181,387
.....	4,204,576	815,334	2,246,923	2,120,958	821,178	7,649	10,216,618	69,200,448
.....	4,575,527	886,027	1,860,202	2,293,321	828,315	8,231	10,451,623	72,051,912
.....	4,309,332	1,002,417	2,020,237	2,974,732	905,374	7,219	11,219,311	73,012,623
.....	4,154,211	995,260	2,113,174	3,413,361	815,262	8,801	11,500,069	76,294,969
.....	3,866,203	896,853	2,084,293	3,461,026	866,225	5,273	11,179,873	81,800,741
.....	3,748,451	837,029	1,996,986	3,596,308	960,648	1,912	11,141,334	82,976,879
.....	3,131,745	797,359	2,250,219	3,920,120	889,564	—	10,989,007	61,131,123[2]
.....	2,621,330	701,952	2,020,105	4,426 060	902,432	—	10,671,879	52,538,240

[1] Figures revised since the publication of the 1969 Canada Year Book to include small amounts reclaimed from waste heap. [2] The drop in the value of coal production in 1968 reflects the discontinuance in that year of ention payments to mines in the Maritime Provinces.

31.—Consumption of Canadian and Imported Coal in Canada, 1960-69

Year	Canadian Coal[1]		Imported Coal 'Entered for Consumption'[2]				Grand Total	Consumption per Capita
			From United States	From Britain	Total[3]			
	tons	p.c.	tons	tons	tons	p.c.	tons	tons
.....	9,973,308	42.9	13,211,493	65,375	13,276,599	57.1	23,249,907	1.31
.....	9,572,805	44.3	12,253,272	53,226	12,057,086	55.7	21,629,891	1.19
.....	9,510,293	43.4	12,583,618	30,571	12,377,965	56.6	21,888,258	1.18
.....	9,504,903	42.0	13,348,913	21,101	13,105,686	58.0	22,610,589	1.20
.....	10,080,243	40.0	14,983,536	5,578	14,987,656	59.8	25,067,899	1.29
.....	10,181,171	38.0	16,590,348	5,045	16,593,547	62.0	26,774,718	1.35
.....	10,117,756	38.1	16,436,755	—	16,435,111	61.9	26,552,867	1.32
.....	9,764,754	37.7	16,114,190	—	16,113,329	62.3	25,878,083	1.26
.....	9,879,860	36.7	17,046,745	—	17,044,880	63.3	26,924,740	1.30
.....	8,928,341	34.0	17,347,404	—	17,346,667	66.0	26,275,008	1.25

[1] The sum of Canadian coal mines' sales, colliery consumption, coal supplied to employees and coal used in king coke, etc., less the tonnage of coal exported. [2] Imports of briquettes are not included in this table are shown separately in Table 32. [3] Deductions have been made from this column to take account of ign coal re-exported from Canada; bituminous coal ex-warehoused for ships' stores was deducted for the years r to 1964.

–Imports of Anthracite, Bituminous and Lignite Coal and Briquettes and Exports of Domestic Coal, 1960-69

Year	Imports of Coal and Briquettes					Exports of Domestic Coal[4]	
	Anthracite	Bituminous[1,2]	Briquettes[3]	Total			
	tons	tons	tons	tons	$	tons	$
.....	1,297,467	12,267,369	15,528	13,580,364	77,174,112	852,921	6,789,163
.....	1,058,157	11,248,341	9,664	12,316,162	71,717,030	939,336	8,540,749
.....	914,336	11,699,853	7,608	12,621,797	74,307,252	893,919	8,207,354
.....	847,326	12,523,080	6,445	13,376,851	78,837,274	1,054,367	9,870,185
.....	653,838	14,335,276	7,140	14,996,254	86,472,326	1,291,664	11,971,857
.....	640,161	15,955,232	7,934	16,603,327	126,200,054	1,225,994	12,671,785
.....	594,193	15,842,562	6,583	16,443,338	141,038,000	1,228,820	13,202,161
.....	525,645	15,588,545	8,489	16,122,679	145,544,000	1,338,353	15,091,852
.....	430,197	16,616,548	6,062	17,052,807	160,391,000	1,447,012	16,336,038
.....	436,017	16,911,387	6,061	17,353,465	83,826,132	1,377,872	9,451,102

[1] Prior to 1964, figures include coal ex-warehoused for ships' stores. [2] Includes foreign coal re-exported n Canada. [3] Coal and coke. [4] Excludes briquettes.

Provincial Production and Mine Developments

British Columbia.—In 1969, most of British Columbia's coal came from the Crow nest Pass area; a small amount was recovered in the Smithers area as part of a salva operation. In the Crowsnest Pass area the coal mining scene was dominated by t rapidly progressing developments of Kaiser Resources Ltd. Although Kaiser's producti from its Michel Colliery remained below 1,000,000 tons, production will rise sharply in 19 when coal is strip-mined from the 50-foot, No. 10 Balmer seam on Harmer Ridge. Annu production initially will be 7,000,000 tons, of which 5,000,000 tons will be exported.

In 1969, Fording Coal Limited announced the signing of a contract with Japane interests for 45,000,000 tons of medium volatile coking coal to be delivered over a 15-y period. The mine, situated 35 miles north of Kaiser's mine along the Fording River Valle is expected to be in production by early 1972. In December 1969, Cascade Pipe Line Lt another wholly owned Canadian Pacific subsidiary, applied for a permit to build a $200,00 000 pipeline to carry coal 460 miles from southeastern British Columbia to the Robe Bank port. This company is at present doing feasibility studies.

Alberta.—Alberta is Canada's leading coal-producing province and has the larg number of coal mines, although many are small mines with production of less than 25,0 tons a year. In 1969, Alberta coal production reached 4,400,000 tons, the highest 14 years.

On the Alberta side of the Crowsnest Pass, Coleman Collieries Limited produc coking coal from its Vicary Creek underground mine with supplemental production fr some small strip pits, to supply coal mainly to Japanese steel mills under the terms of contract signed in 1967. To the north of the Crowsnest Pass in the Cascade coal ar Canmore Mines, Limited produced coal mainly from its underground mine with supp mentary output from small strip operations. Canmore has an export contract to Jap for 3,800,000 long tons over 10 years and is planning to implement auger mining on steeply pitching seams in 1970. At year-end, Cardinal River Coals Ltd. in the Coalsp area at Luscar had nearly completed the construction of a modern coal preparation pla and the pre-production stripping of overburden from the strip sites, and expected to beg shipping coking coal to Japan in 1970. For many years the coal resources of the Smo River area, because of the absence of roads or railways, were not developed but, wh construction started on the Alberta resources railway, McIntyre Coal Mines Limited beg to look to an early utilization of their coal resources and obtained a contract in 1969 f coking coal. The railway was officially opened in May 1969. A new town, Grande Cach was developed to accommodate the families of the anticipated 1,000 employees for t 2,000,000-ton-per-year mine.

In the plains area of Alberta, the shallow flat-lying subbituminous coal is produc primarily to supply thermal-electric power plants. Alberta Coal Ltd., which mines co for Calgary Power Ltd. at Wabamun near Edmonton, has the largest subbituminous min Calgary Power is constructing an additional 300,000-kw. thermal power plant across La Wabamun from its other plant and Alberta Coal is preparing a new strip mine adjacent this plant. Alberta Coal also operates mines through subsidiaries at Sheerness and Halkirk in the Castor area. Forestburg Collieries Limited, a Luscar Ltd. subsidiary, h a large mine at Forestburg just north of Halkirk. Both these surface mines supply c to the Canadian Utilities Battle River power plant situated between the two mines. Tw moderate-sized underground mines still produce subbituminous coal in central Alberta Century Coals Limited in Drumheller and Star-Key Mines Ltd. in the Edmonton distric

Saskatchewan.—In the Estevan area of southeastern Saskatchewan, lignite co is strip-mined by highly productive mining operations owned by Alberta Coal Ltd., Mar toba and Saskatchewan Coal Company Limited and Utility Coals Ltd. The Saskatchewa coal mines have ideal mining conditions consisting of shallow overburden and fairly thic

al seams that are mined by large dragline and shovel operations. This is reflected by the .3-ton output per man-day for Saskatchewan strip mines compared with the Canadian verage of 46.5 for surface mines.

Yukon Territory.—In the Yukon Territory, the Carmacks coal mine was reopened Anvil Mining Corporation Limited in 1969. Production from the mine will not be rge and will be used at the Anvil silver-lead-zinc mine at Vangorda Creek to supply fuel r a coal-fired drying plant for concentrates.

New Brunswick.—New Brunswick coal production decreased about 12 p.c. to 702,000 ns in 1969 in line with the gradual phasing-out of the uneconomic coal industry at Minto. n Sept. 1, the New Brunswick Government formally took over all the surface and under- ound mines in the Minto-Chipman coalfields. A new provincial company—N.B. Coal imited, a wholly owned subsidiary of the Grand Lake Development Corporation—was corporated to take over and manage the New Brunswick coal mines.

Nova Scotia.—In 1969, Nova Scotia coal production was 2,600,000 tons from 10 perating mines. Of this amount the Cape Breton Development Corporation (DEVCO) roduced 2,200,000 tons, all by underground methods from Cape Breton Island coal seams at dip under the sea. DEVCO took over the coal mines and related interests of the ominion Steel and Coal Corporation, Limited, in March 1968 and, in line with a plan to duce costly operations, lowered production by 18 p.c. and offered voluntary pre-retirement about 1,000 older men of the total working force of 5,800. In June 1969, work began in EVCO's new Lingan mine. This mine, which will produce relatively low sulphur coal r carbonization at DEVCO's coke oven plants, should be in full production in 1974. ras d'Or Coal Company Limited shut down its Four Star Colliery in Broughton in late ecember.

Section 2.—Government Aid to the Mineral Industry

Subsection 1.—Federal Government Aid

Federal assistance to the mining industry takes the form of the provision of detailed ological, geophysical, topographical, geodetic, geographical and marine data which are basic importance to the discovery and development of the mineral resources of Canada; e provision, through laboratory and pilot-plant research, of technical information con- rning the processing of ores, industrial minerals and fuels on a commercial scale; financial nd technical assistance to the gold-mining industry under the Emergency Gold Mining ssistance Act, and certain tax incentives.

The Department of Energy, Mines and Resources.—The federal Department Energy, Mines and Resources came into being on Oct. 1, 1966. It embraces all of the nctions of the former Department of Mines and Technical Surveys, and new functions rtaining to water and energy resources. Apart from its administrative establishments, e Department is made up of four Groups—Mines and Geosciences, Mineral Develop- ent, Water, and Energy Development—each headed by an assistant deputy minister nd each aiding the Canadian mineral industry in some way.

The *Mines and Geosciences Group* contains four branches—the Mines Branch, the eological Survey of Canada, the Observatories Branch and the Surveys and Mapping ranch. The Mines Branch is a large laboratory and pilot-plant complex carrying out ap- lied and basic research to discover new and better methods of ensuring mine safety, extract- g and refining ores and other minerals, and using metals and minerals in industry and de- nce. Gratifying results have been achieved in the extraction of metals from ores and in e refining of low-grade crude oil, in the automation of grinding circuits and cyanide aching processes in gold mills and in the leaching of ground or crushed uranium ores by

bacteria; an example of work that has resulted in direct economic benefit has been th development of a process to produce metallurgical coke from western Canadian coal, mad possible by a long-term contract to export coke to Japan. In pyrometallurgy—the extrac tion of metals by heat—applied research is concentrated principally on the combination o shaft and electric furnaces for smelting iron ore. In petroleum refining, research concern hydrogenation, catalytic cracking, and catalyst development. This work is highly signi ficant because of the opening-up of unconventional sources such as the Athabasca tar sand and the so-called Colorado oil shales, whose economic importance has been recognized b the Mines Branch for many years. A close tie-in with producers is maintained in minera processing in which the emphasis is on the concentration of metallic ores and on the pro cessing and improvement of industrial minerals. In the field of mineral sciences, the physi cal, chemical, crystallographic and magnetic studies being undertaken on sulphide mineral are of fundamental interest. In physical metallurgy, experiments on new alloy combina tions continue to yield valuable practical benefits for Canadian industry.

The Mines Branch, on the advice of experts from industry and the universities, also awards an annual series of research grants in mining sciences to Canadian universities In 1969, the total amount distributed was $112,000.

The Geological Survey of Canada maps and studies the geology of Canada and carries out specialized research to enable its geologists to explain the geology of Canada more effectively. It is the major organization engaged in this work in Canada and its studies extend to all provinces and territories. The Survey maintains a close co-operation with provincial agencies. In the provinces, it endeavours, after prior consultation with the provincial government concerned, to fill in the province's geological framework and thus provide a basis for more detailed mapping by provincial geologists and commercial exploration companies. In areas under development, the Survey does more detailed mapping to supply industry with the geological key to the structures of the orebodies. Each year, the Geological Survey sends about 100 parties into many parts of Canada. They conduct broad regional investigations in the Canadian Shield, the Appalachian and the Cordilleran geosynclinal belts, the sedimentary basins of the mainland and the Arctic Archipelago, and in unconsolidated sediments. As the first systematic reconnaissance of Canada is approaching completion, the country's major geological features are reasonably well known and the Survey is giving increasing attention to fundamental research into field and laboratory problems, identified in the reconnaissance phase, to understand the geological evolution of the country. It publishes the results of its research in memoirs, bulletins, papers and maps, and in numerous scientific technical journals.

The headquarters of the Geological Survey is at Ottawa but it has several regional offices including the Institute of Sedimentary and Petroleum Geology in Calgary which serves the special needs of the western provinces. The Survey each year awards a large number of grants in support of geological research in Canadian universities; in 1969 these totalled $275,242.

The Earth Physics Branch carries out much geophysical work of interest to the mineral industry. It studies, collects and publishes, in the form of maps and charts, information on the geomagnetic field in Canada. Most of the information published is obtained from airborne geomagnetic surveys, which have ranged over the whole of Canada and across the Atlantic to Scandinavia. In addition, the Branch has a network of nine permanent geomagnetic observatories, as well as temporary observatories in summer at many widely distributed sites. It also operates a network of 28 seismic stations to assist in the study of the earth's interior and to obtain data for its quantitative assessment of seismic risk throughout Canada. In gravity research, another means of studying the composition of the earth's crust, the Branch is systematically mapping variations in the earth's gravity on a regional basis throughout Canada, including the Arctic and the floors of the Gulf of St. Lawrence and Hudson Bay. The results of all gravity measurements to the end of 1966 are available in a new Gravity Map of Canada on a scale of 1:5,000,000, or about 80 miles to the inch, for easy comparison with the new Geological and Tectonic maps of Canada on a similar scale.

No mineral development is possible without accurate, large-scale topographical maps. The Surveys and Mapping Branch, in conjunction with the Mapping and Charting Establishment of the Department of National Defence, has completed the topographical mapping of the country at the medium scale of 1:250,000, or about four miles to the inch. About 35 p.c. of the larger-scale mapping at 1:50,000 has been completed in the more settled areas and areas of greater economic importance. (See also pp. 23-25.)

The *Mineral Development Group* is composed of the Mineral Resources Branch, the Explosives Division and the Quebec Regional Office. The Explosives Division is responsible for the administration of the federal Explosives Act which is primarily an Act of public safety to control the manufacture, authorization, storage, sale, importation and transportation by road of explosives.

The Mineral Resources Branch is responsible for resource-economic research, program development and policy formulation in the field of non-renewable resources. It conducts fundamental and applied resource-engineering-economic research and field investigations into non-renewable resource problems, policies and programs on a commodity or total industry basis, in a regional, national and international context. The work covers all aspects of the mineral industry from resources through exploration, development, production, processing, transportation and consumption. On the basis of this work, the Branch publishes resource-engineering-economic reports and advises government departments and agencies on non-renewable resource policy matters. Current activities include regional studies of the mineral economy of a number of areas in Canada; assessment of mineral projects in various parts of Canada for which federal support has been requested, mineral resource and mineral reserve studies in a number of mineral commodities, including the mineral fuels, uranium and coal; and the safeguarding of Canadian mineral interests through participation in international agencies such as the United Nations Lead-Zinc Study Group, the United Nations Steel Committee, the Organization for Economic Co-operation and Development, and the International Tin Council. The Branch administers the Emergency Gold Mining Assistance Act (see p. 722) as a means of aiding a number of mining communities largely dependent upon the gold mines. In collaboration with the Canadian International Development Agency and with the support of industry, the Branch is setting up training courses for mineral scientists, technologists and economists brought to Canada under the various aid programs, and is advising on mineral projects undertaken by Canada as an aid to developing countries. The Branch publishes an extensive series of reports and other material, and maintains the Mineral Occurrence Index, which is a listing of about 10,000 mineral showings and deposits in Canada that may be consulted by anyone interested.

The *Water Group* is charged with the Department's responsibility for advising on federal water policies and for co-ordinating the work of federal agencies in water resource management and water pollution. In addition to broad programs of hydrometric, oceanographic and hydrographic work, the Group undertakes and co-ordinates water studies at regional levels, conducts research on the relationships of water and renewable resources and maintains a continuing review of national and regional water policies and programs. The Group is composed of the Marine Sciences Branch, the Inland Waters Branch and the Policy and Planning Branch. Of particular interest to the mining industry are (*a*) the work being done by geophysicists of the Atlantic Oceanographic Group of the Marine Sciences Branch on the continental shelf off the Atlantic Coast and in the Gulf of St. Lawrence and (*b*) the study of pollution problems in mining areas, such as in northeastern New Brunswick and on the headwaters of the Saskatchewan River system, by the Inland Waters Branch.

The *Energy Development Group* has broad responsibilities relating to the development of plans and policies for all forms of energy; the development of programs, legislation and agreements to implement those policies; the direction of studies relating to energy sources and requirements; and the co-ordination of policy advice. The Assistant Deputy Minister serves as adviser on over-all plans and policies relating to energy sources and requirements.

Tax Incentives to the Mineral Industry.*—Although mineral industry enterprise are subject to federal income tax, there are certain benefits granted to such enterprises unde the Income Tax Act which serve as incentives to exploration and development of minerals

New mining operations based on metallic mineral deposits and most industrial minera deposits are exempt from income tax for the first three years of operation. The three-yea exemption does not apply to oil and gas wells, but does apply to the mining of oil shale and bituminous sand.

The operators of oil or gas wells or mines may claim, during the full life of the operation a depletion allowance which is equal to one third of the taxable income. In general, th effect of the percentage depletion allowance is to reduce the tax otherwise payable by on third.

There are special depletion allowances for gold and coal mines. The operator of a gold mine may elect to apply a percentage depletion allowance rate of 40 p.c. or an amoun of $4 per ounce of gold produced as a deduction from taxable income. The deduction fo coal is 10 cents for each ton of coal mined in the year.

Non-operators are entitled to a depletion allowance of 25 p.c. of their gross income from wells or most mines.

The right of a mining or petroleum company to claim costs of exploration and develop- ment incurred in the search for oil, gas or minerals in Canada as immediate deductions from income from all sources is generally regarded as an important tax benefit.

Prospectors and their financial backers are exempt from income tax on receipts from the sale of a mining property acquired as a result of the prospector's efforts, other than rents, royalties or similar payments.

Emergency Gold Mining Assistance Act.—Under this Act, which came into force in 1948 (RSC 1952, c. 95), financial assistance is provided to marginal gold mines to counter- act the effects of increasing costs of production and a fixed price for gold. By enabling gold mines to extend their productive life, the subventions help communities dependent on gold mining to adjust gradually to diminishing support. The application of the Act was extended to Dec. 31, 1970 by an amendment passed on Nov. 28, 1967. The Act is admini- stered by the Department of Energy, Mines and Resources.

An amendment to the Act in 1963, which extended provisions of the Act to Dec. 31, 1967, also introduced a restriction which affects lode gold mines coming into production after June 30, 1965; such mines are eligible for assistance only if the mine provides direct economic support to an existing community, that is, if the majority of the persons employed at the mine reside in one or more of the established communities that are specified in a schedule to the Act. The restriction does not apply to lode mines in production before July 1, 1965 nor to placer gold mines.

The amount of assistance payable to an operator is determined by a formula and is based on the average cost of production per ounce and the number of ounces produced; it ranges from zero to $10.27 per ounce produced. Gold mines having a cost of production of $26.50 or less per ounce receive no assistance and those having a cost of production of $45 or more per ounce receive the maximum rate of $10.27 per ounce.

Under the current formula, the assistance payable to the operator of a gold mine is computed by adding 25 p.c. to the product of two factors—the "rate of assistance" and the number of "assistance ounces". The number of assistance ounces is two thirds of the total ounces produced and sold to the Royal Canadian Mint by a mine in a calendar year. The rate-of-assistance factor is two thirds of the amount by which the average cost of production exceeds $26.50. The rate-of-assistance factor is limited to a maximum of $12.33 which is reached when the average cost of production rises to $45 per ounce of gold produced. The average cost of production is determined by dividing the total allowable costs by the total number of ounces produced in the form of bullion from the mine in a calendar year.

* As at June 1970.

y those ounces of gold that have been sold to the Royal Canadian Mint are eligible for usion in the assistance-ounces factor. The cost of production includes mining, milling, elting, refining, transportation and administration costs. Allowances are made for reciation, pre-production costs and expenditures on exploration and development on the e property in accordance with the Regulations.

The amounts paid to operators of gold mines to Mar. 31, 1969 for the years 1948-68, usive, totalled $261,293,250 on a production of 57,155,705 oz. t. of gold produced and in accordance with requirements of the Act. The assistance payable for gold produced sold under the Act in the calendar year 1969 was estimated to be $13,502,000.

In March 1968, the governors of the central banks of seven nations introduced a -price system for gold which separated transactions in gold among the central banks n private open-market operations. The governors agreed that the existing official erves would be used only in transfers among monetary authorities at the established e of $35(U.S.) an ounce, and that the central banks would neither purchase nor sell d in private gold markets. The Minister of Finance stated that Canada would support y the agreements reached by the central bankers. He also stated that there would be change in the practices applicable to gold producers under the Emergency Gold Mining istance Act.

Operators of gold mines were thus offered the alternatives of selling their production the Royal Canadian Mint at the fixed price of $35 an ounce in United States funds in er to qualify for assistance payments under the Emergency Gold Mining Assistance Act f selling on the open market at the price determined by supply and demand. It may be ed that the amount of assistance payable is determined on the basis of the cost of produc- n and is not related to the selling price of the gold.

EDERAL RESEARCH ADVANCES CANADIAN MINERAL DEVELOPMENT*

Mineral deposits are unique to a country—they are part of a country's 'patronymy', o speak; methods of mining have to be designed to suit particular deposits and to ensure t the minerals are extracted safely and efficiently to the economic advantage of the ntry. Thus, Canada's great diversity of mineral resources, its own needs for mineral ducts and the maintenance of its large mineral export industry, which now accounts for ut 60 p.c. of the value of all mineral output, together justify a strong research and devel- nent effort by government as well as by industry, universities and equipment manu- turers.

The Mines Branch of the Department of Energy, Mines and Resources is the Federal vernment's agency dedicated to assisting in achieving Canada's goals of a continuously sperous and competitive mineral industry which, deriving its wealth from a rich endow- nt, has traditionally contributed greatly to the high standard of living of Canadians. e Branch is a multi-discipline institution organized to provide knowledge and to conduct own research or co-operate with Canadian industry and universities in research in the ctrum of non-renewable resources—metallic or non-metallic ores, fuels, structural terials and metals. It must maintain both flexibility and versatility in its attitudes and grams; it must contribute to the development of new or scarce minerals, like ores of sium, tantalum or tin and manganese, and, at the same time, not overlook any mineral t may currently be regarded as uneconomical or even passé, like coal. In other words, efforts of the Mines Branch, through its complex of laboratories and pilot plants and its ntific staff, are directed toward assisting the Canadian mineral industry in the more cient extraction and elaboration of mineral wealth of all types and toward improving broadening the uses of metals and minerals.

The following paragraphs give examples of the types of programs now under way in Mineral Science Division and in the Fuels Research, Mining Research and Metals

* Prepared under the direction of Dr. John Convey, Director of the Mines Branch, Department of Energy, es and Resources, Ottawa.

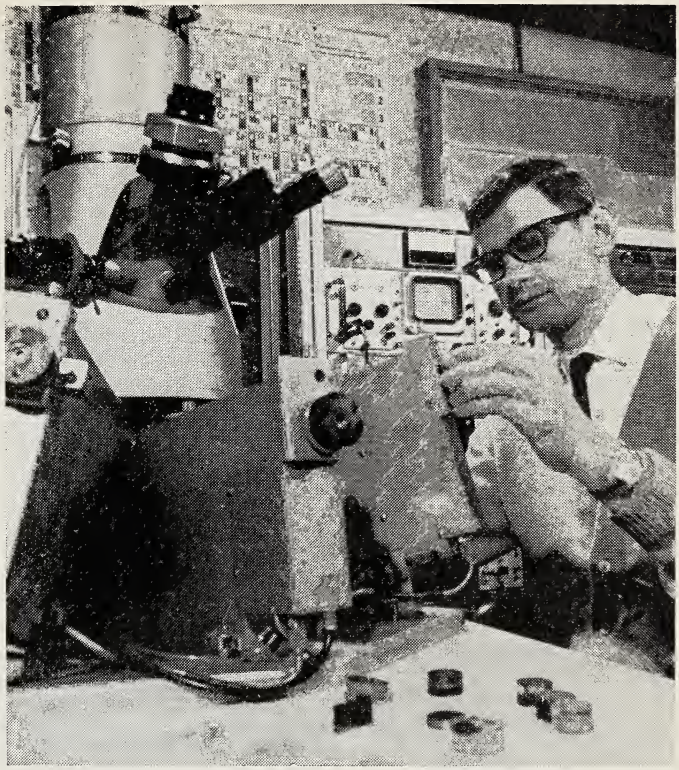
Reduction and Energy Centres. In addition, a wide variety of projects are undertaken the Mineral Processing Division to develop new and improved processing procedures the economic recovery of minerals from specific Canadian ores; continuing research metallurgical processing, pollution control and metal corrosion is carried out by the Extr tion Metallurgy Division; and Physical Metallurgy Division programs consist essentia of applied research and development related to the conservation, processing, properties a utilization of Canadian metals. The Branch identifies and predicts problem areas in operation with the Canadian mineral industry through the National Advisory Commit on Mining and Metallurgical Research.

The work of the *Mineral Sciences Division* in the R and D support of the min and metallurgical industries of Canada is characterized by the application of increasin sophisticated techniques of science and technology, some of which, until recently, wo have been regarded as being relevant only in a highly academic area of study. Examp of this trend are in the use of Mössbauer spectroscopy, neutron-activation analysis a electron microprobe analysis.

Extensive studies have been conducted of mineral occurrences in certain areas Canada where rich mineralization occurs but where complications are encountered in identi ing and characterizing the mineral assemblages. Areas in which such studies are be conducted include the silver deposits of the Cobalt–Gowganda area of Ontario, the c seminated copper-molybdenum deposits of the Highland Valley area of British Columb the base metal deposits of the Red Lake area of northwestern Ontario and, most recent the tin deposits of the Mount Pleasant area of New Brunswick. In addition to the c ventional tools of the mineralogist and the petrographer, such as the optical microsco the use of the electron micro-beam probe has been of great value in solving the proble of the composition and structure of the complex intergrowths of a multitude of miner many of them uncommon and some completely new, that have been encountered in th deposits. The information made available is of assistance to the ore-dressing engineer in devising appropriate methods of extraction and beneficiation of the mineral values the deposit.

One of the problems in ore treatment is to be able to monitor and control the proc of beneficiation and to be able to do this continuously and without the need for delays a stock-piling while analyses are performed by conventional means at various stages. Wh X-ray fluorescence analysis has been used for this purpose for several years in some be ficiation plants, difficulties of monitoring and control have been experienced. The Mine Sciences Division is attempting to refine the method and to eliminate these difficulti For example, the on-stream analysis of ore-slurries applied to the copper-zinc ores fr northern Manitoba is under study to characterize such parameters of the slurry as dens and particle size, as well as composition, and to use these parameters to control the wh flow of the slurries through the beneficiation plant. In addition, consideration is be given to the use of more novel methods of the radiation-monitoring of mineral slurr employing radioactive isotopes and related procedures as the sensing and control devi These techniques have the advantage that, if they can be brought to a successful completi the method will be continuous, non-destructive and self-controlling.

Standards have characterized trade in metals, minerals and chemicals for the p twenty years. Canada, as an important trading nation, particularly in the minera metals field, participates in standardization programs on a national and international ba The contribution of the Mineral Sciences Division to this work comprises the developm of internationally accepted methods of analysis of ores, minerals and metals for a wi range of metallic and non-metallic elements. Standard methods are, of course, vital the field of commerce so that both vendor and customer shall be equitably treated. F many years, the Mineral Sciences has participated in programs for the development standard analytical procedures, largely by conventional chemical and instrumental metho More recently, the techniques of atomic-absorption spectrometry and of neutron-activati analysis have played an important role. Most recently, this type of work has been



ents of the earth's may be quantitatively lysed very rapidly by electron microprobe in in the Mineral Sciences sion. This facility is an ntial time-saving tool modern mineral tech- gy, particularly in pre- ary assessments as it ifies the form in h the valuable element rs and indicates the ibility of its recovery.

led to an attempt to provide standard reference ore minerals. An example of this k is in the development of a standard Mo/Bi ore from Quebec. The analyses were ormed by X-ray fluorescence and then statistical procedures were used to assess the dity of the sampling procedures and the reliability of the analytical method itself. ilar statistical methods are being applied to noble-metal analyses in order to establish rnationally acceptable standard procedures.

The *Fuels Research Centre* is concerned with the development of new engineering scientific approaches to encourage the efficient utilization and conservation of Canada's , petroleum and natural resources. As the utilization of these resources inevitably s rise to the pollution of the environment, the Fuels Research Centre has shared public rest in and concern for their effective use and development. This recent public aware- of the magnitude and seriousness of the pollution problems has led to a rather abrupt nge in attitude which is now being expressed in terms of legislation.

However, the enactment of legislation and the establishment of limits and penalties ne thing, but overcoming the technical difficulties to achieve these desired limits is her. It is in this area that the Fuels Research Centre is attempting to assist industry nding practical solutions to some of the atmospheric pollution problems. A continuous rt is required because advances in technology will be offset by two factors that will tend ncrease atmospheric pollution—the growth in population and the migration of people he larger urban centres in search of employment. It is evident that balance must be ntained between regional planning and the rate at which industry can apply new tech- gy to achieve atmospheric-quality standards.

In 1969, the Fuels Research Centre regrouped its research activities into progra associated with the major national needs, permitting better financial support and cont Three basic programs now function—air pollution and combustion research, the evaluat of the quality of Canadian fossil fuel resources, and research associated with the certifi tion of electrical equipment for use in coal mines or industrial locations where combust gases are present. At the same time, the activities of the Metallurgical Fuel Engineer Section were enlarged and combined with a portion of the Extraction Division to forn new research organization called the Metals Reduction and Energy Centre.

The air pollution and combustion research program includes projects concerned w the improvement of the combustion process and elimination of pollutants, from combusti by chemical reaction and subsequent dispersion into the atmosphere, and with the elimi tion of sulphur from the fuel and the improvement of fuel quality before combusti In the former, the emphasis is on the mechanism of combustion and the study of fla aerodynamics to reduce pollution, and also on the dispersion of smoke plumes from stacks of large thermal power plants.

The elimination of sulphur from oils prior to combustion falls into two categorie the elimination of sulphur from residual oil obtained after the distillation of a normal cr oil and the removal of sulphur from low-grade heavy crude oils, such as the Athaba bitumen. With the development of increasingly stringent air pollution regulations, markets available for both types of oil will become more restricted. Since the econo can be sustained only by an abundant supply of cheap energy from these sources, the c of the high-pressure hydrogenation research is directed to the elimination of sulphur fr these fuels at reasonable cost and to the encouragement of their efficient use.

Much of the pollution that arises from the combustion of low-grade petroleum is c to the sulphur and a significant advance has been made in the development of super chromatographic columns for the separation of sulphur compounds, on a preparative sc into major classes. The development of analytic capability is an important segment research because the benefits are felt in a wide variety of problems extending from resource evaluation program to the identification of oil in major oil spills such as h occurred in recent months.

The continuing tension in the Middle East and the shortage of natural gas and of ch sources of petroleum in the United States have spurred interest in developing Arctic sour of petroleum and in reviewing North American fossil fuel resources. The Fuels Resea Centre is particularly concerned with the evaluation of the quality of the Canadian port of these reserves and with the development of improved techniques for obtaining sulph free petroleum from low-grade oil sands.

A directory of Canadian oil analysis and reservoir data has been prepared which inclu most of the oil analysis conducted over several years at the Fuels Research Centre an representative of all significant Canadian oil fields.

The *Metals Reduction and Energy Centre* studies the energy requirements of Canadian metals and minerals industries and assesses the technical and transportat problems encountered in supplying energy needs of these industries. The technology the application of energy to metallurgical processes is developed through study of proces for the reduction of metal ores and the carbonization (and other conversion process applied to fossil fuel resources to enhance their usefulness and value. Although Canad generally thought to be a mineral-rich country, in fact, the only fossil fuel available in entire central and eastern part of the country is the reserve in Nova Scotia. Not only fuels not in good supply, but new economical hydro-power sites, although once numero are now very scarce. Atomic energy may represent the ultimate solution but energy fr this type of generating station is at present neither available in quantity nor at attract cost. It is expected that the transition period may last as long as 20 years so that, current the industrial centres of Canada are more dependent than ever before upon distant external energy resource minerals to accommodate constantly growing energy-using

tries. In terms of both volume and value, iron is by far the most important metallic processed and, since the iron ore industry developed at a later date than the steel industry and produced largely for export, it has a distinctly separate "industrial fabric" from steel industry. It is now apparent that new methods of converting iron oxide to the tallic state are reaching industrial maturity but it is not yet clear whether this new and portant processing step will be part of the steel or of the iron ore industry. Since energy ts make up as much as 70 p.c. of the operating costs of iron reduction processes, the ation of the processing plants and the type of reducant to be used will have a profound ct on the future development of this important branch of the metals industry. The ntre carries out research and development into new methods of iron reduction, follows development processes elsewhere, and takes special interest in the technical factors erning their energy requirements and the savings inherent in new methods of interecting iron and steel-making processes.

With respect to the conventional iron-producing process, the Centre is concerned with provision of coke for the iron blast furnace. This work involves the evaluation of new ls becoming available in Western Canada for both export and domestic use, coals from United States being used by the Ontario steel industry, new methods of upgrading fine l to produce low-ash and low-sulphur coals, new methods of dewatering coal using oilisted drying methods, and improvements to the coking process itself. Entirely new thods of coking are also being investigated, particularly the type of process known as rm-coking", which embraces special methods of upgrading and agglomerating coal as l as the novel coking step itself.

nuclear magnetic onance spectrometer used in the Fuels earch Centre to dy heavy oils, thereassisting in the deopment of new reng strategies needed achieve more effit methods of proing commercial products.

The Centre is involved in several aspects of transporting coal from mine to mark Of particular importance is the study of the hydraulic transport (by pipeline) of coal slur to be used for coking; in this connection, a solution to the problem of dewatering and sizi to meet coking requirements is in process of development. Also under study is the proble of transporting coke where its low-bulk density is a major disadvantage. The applicati of carbonization technique to the treatment of low-rank coals to allow their econon transport for use as a reducant in some direct reduction iron processes, and even for co bustion purposes, is being investigated.

The Metallurgical Fuels Engineering group of the Centre serves the technologi requirements of the coal and coke industries of Canada. It is seeking ways and means assisting the coal industry by assessing the coking properties of Canadian coals in aspe related to exploration, mining, beneficiation, transportation, utilization, and quality contr and of assisting the coke industry in the improvement of coke quality, the selection of co for the manufacture of coke, the development of new techniques, and the modification existing processes for the production of high-carbon products for specific markets.

The *Mining Research Centre* carries out research in those phases of mining up mineral processing, including blasting, rock breakage, ground control, mining systems a environmental control. Personnel and research facilities are located at four laboratories Canadian Explosives Research Laboratory, Ottawa; Rock Mechanics Laboratory, Ottaw Elliot Lake Laboratory; and the Western Office, Calgary.

The Canadian mining industry is large by world standards and produces almost complete range of metals and industrial minerals. Mining conditions vary from the "so yielding ground of the potash mines in Saskatchewan to the "hard" rock mines of t Canadian Shield. Although some orebodies will continue to be found near the surfa future trends will be toward deeper mining, both underground and in open pits. Proble encountered at depth will be more severe than those now existing and the present basis engineering experience and trial and error procedures may not be sufficient to deal effectiv with them. Consequently, a scientific base is required to aid judgement on what shou be done once they occur. At present, research is not at a stage of providing compl solutions to mining problems; rather, it provides relevant information to mine operat which assists them in making decisions.

Both basic and applied research is carried out at the Centre. Basic research is aim at providing a scientific basis for all phases of mining; applied research involves the prese day problems in mines using the knowledge and experience already available. About h of the research work is done in the mines in active participation with the mining compani Co-operative research is also carried out with other federal and provincial departmen Canadian universities and research foundations.

The *blasting research* program is concerned with increasing safety and reducing t cost of drilling and blasting. During 1970, about 600,000,000 tons of ore and waste ro were excavated at a cost of about $130,000,000 for drilling and blasting. A modest i provement in design criteria, based on the rock and explosive properties and their influe on blasting, could lead to considerable financial savings.

The imposed stresses have been evaluated for column charges, using analytical te niques, laboratory-testing and field trials and there is reasonable agreement with fi measurements. The zone of fragmentation can be predicted, knowing the stress dis bution in conjunction with a fracture criterion for the rock. In this way, borehole spac and amount of charge required for optimum blasting can be evaluated. Another part the blasting program is evaluating the effectiveness of pre-splitting as a means of reduc structural damage to open-pit walls due to explosive action. This is done by measur accelerations produced by various blasting configurations.

The Canadian Explosives Research Laboratory provides technical assistance Canadian regulatory agencies responsible for the establishment of standards for transpor tion, storage and use of explosives and dangerous goods. During the past few years th

s been a considerable expansion in the variety and amount of blasting agents and danger- s goods. There is a continuous need to update regulations and to improve methods of sting these materials.

The objective of *rock breakage* research is to investigate the mechanics of breakage, her than explosives, at the rock face and in grinding processes. Research on the thermal/ echanical breakage of rock particles on laboratory-size samples showed that pre-heating sults in easier grinding. Greatest benefit was obtained with silica-bearing ores, whereas lcareous ores were hardly affected.

A large number of variables are involved in mill circuits, and it is difficult to evaluate e importance of any one variable. With the advent of computers, large volumes of mill ta can be analysed to develop mathematical models describing mill behaviour. Com- ter simulation should then be a means of optimizing operating conditions. The expected nefits would be reduced cost and/or increased mineral recovery.

In recent years, increased use has been made of tunnelling and raise-boring machines mines and civil engineering projects. Within this concept of new methods of breaking ck, wedging tools for tunnelling machines and the feasibility of automating raise-boring achines are being investigated.

The *ground control* program deals with the stability of the rock around mining cavations. Basic research is concerned with developing mathematical models for pre- cting stresses and deformations of rock structures using finite element techniques. The m is to provide a theoretical basis similar to that which has existed in other branches of gineering for many years. It has always been realized that structural geology plays an portant part in the stability of a structure, without knowing how important. Present vestigations are clarifying the picture by measuring the effect of geological weakness anes on stress distribution and strength of the rock mass. Research in mines essentially volves taking measurements of stress and deformation, which in turn requires adequate strumentation. In North America the Mining Research Centre has pioneered the strain ll overcoring technique of stress measurement, and multi-wire borehole extensometers. oth systems are now in common use in Canadian mines.

Applied research is conducted almost exclusively in the mines throughout Canada. rtly as a result of in-situ measurements, two room-and-pillar mines have been able to crease their extraction. Considerable work has been done on rock bolts as a means of tificial support. The testing of individual bolts to define anchorage capacity, and the onitoring of bolt loads and deformation of the roof strata have been used to define the lequacy of these support systems. Measurements of fill pressure and movement of the rrounding strata are being taken to define the stabilizing effect of rock/sand/cement fill.

Open-pit mines account for approximately 60 p.c. of the excavated tonnage in Canada, d any, even slight, increase of slope angle results in enormous savings in reduced waste moval or increased ore recovery. A small field trial, using cable bolts to artificially support slope, indicated that this method was technically and economically feasible. There s been a resurgence in the coal mining industry of Canada, and a new Western Office in algary is at present investigating mining conditions in these mines.

Miners, because of their working environment, are susceptible to lung diseases. The bjective of the *environmental control* program is to improve the quality of mine air. ther industrial countries as well as Canada are reviewing the standards for mine air. To sure that these standards are realistic for Canadian conditions, a comprehensive know- dge of the dust and radiation hazard is necessary. In close co-operation with the Mines ccident Prevention Associations of Ontario and Quebec, and the McIntyre Research oundation, work is proceeding on developing standard methods for measuring dust and diation. Various dust sampling instruments from many countries have been calibrated nder controlled conditions in the laboratory. There is considerable variation in the sults from each instrument. The problem is compounded by not knowing whether mass, olume or size is the important parameter with regard to health hazard. Present work is ncerned with the compositional analysis of airborne dust using X-ray techniques.

In some mines, vast quantities of air are required to keep the dust and radiation co centrations down to acceptable levels. Considerable savings may be possible if part the air can be passed through filters and then recirculated. In co-operation with o mining company, 24 commercial filters were tested underground. Efficiency ranged fr 20 p.c. to 100 p.c., with the better filters tending to be relatively expensive and having short life. Where ventilation costs are an appreciable part of the total operating cost, t initial capital and replacement costs of filters are low enough to result in appreciab savings.

The cost and performance figures of typical mining operations are being investigat in the *mining systems* program. With the use of computers, optimization analyses a carried out on the various factors involved.

One study has investigated the costs of longhole drilling with regard to borehole di meter, length and inclination, by conducting a comprehensive field test. Briefly, it w found that costs increase with borehole diameter, and rise significantly with boreh depth. Holes that are horizontal to +60° cost less to drill than downholes. Anoth project is concerned with the optimum combination of primary and secondary breaka and loading at an open-pit mine.

Besides the research activity, the Centre provides a technology service to the mini industry. The Mining Information Centre assists industry and universities in findi research information on any phase of mining. In addition, the presence of a multi-di cipline group of engineers and scientists in Canada provides an opportunity for mini personnel to discuss their problems and have a "sounding board" for their new ideas c improving mining. This facility is increasingly recognized and used by the industry.

Subsection 2.—Provincial Government Aid*

Newfoundland.—The Newfoundland Government, through the Mines Branch the Department of Mines, Agriculture and Resources, provides several valuable servic to those interested or involved in exploration and mining, including: the conduct of continuing program of mineral assessment designed to encourage development of the miner resources of the province; the inspection of exploration work carried out on concession are and the examination of mining operations; the administration of beaches (control of remov of sand and gravel as a conservation measure) and the collection of data relevant to th control of sand removal; the identification of mineral rock specimens submitted by th public and the examination of corresponding occurrences where such is warranted; the di pensing of technical advice, in so far as possible, to those who seek such service (i.e., i hydrological problems and on the availability of quarriable peat moss to be removed permit); co-operation with the Geological Survey of Canada and other Federal Gover ment agencies; and the preparation and publication of data useful for educational an general informational purposes, including the preparation of mineral and rock sample set Geological reports, geophysical maps and compilations of general data pertaining specific areas are procurable at nominal cost and other information from unclassified fil is made available to interested parties. Prospector's or miner's permits are issued by th Mines Branch and mining claims are recorded.

Nova Scotia.—Under the provisions of the Mines Act (RSNS 1967, c. 185), th Government of Nova Scotia may assist a mining company or operator in the sinking c shafts, slopes, deeps and winzes and the driving of adits, tunnels, crosscuts, raises an levels. This assistance may take the form of work performed under contract, the paymen of bills for materials and labour, or the guarantee of bank loans. Any such work must b approved by the Department of Mines. Mining machinery and equipment to be used i searching for or testing and mining minerals may be made available through the Govern ment. Such equipment is under the direct supervision of the Chief Mining Engineer.

* Compiled from material supplied by the respective provincial governments.

essary for increasing the output of coal. Such regulations cover the appropriation, on rment, of unworked coal lands, the operation of coal mines, and loans or guarantees loans. Close co-operation is maintained with the Federal Government in carrying federal regulations made to secure increased production and economical distribution coal from the mines of the province.

New Brunswick.—The Mines Division of the Department of Natural Resources has ee Branches. The *Mineral Resources Branch* administers the disposition of Crown neral rights including the issuing of prospecting licences, recording of mining claims, uing of mining licences and leases and other matters pertaining thereto. Detailed and ex claim maps are prepared for distribution. The Branch is responsible for general l detailed geological mapping and investigations. Maps and reports are prepared for tribution, mineral and rock specimens are examined for prospectors and preliminary minations of mineral prospects are made when requested and circumstances warrant. e *Mines Branch* administers the safety regulations governing operations under the ning Act. All mines are regularly inspected, laboratory facilities are maintained and tain equipment used in mines must be approved. The Branch is responsible also for collection of mining taxes and royalties and the preparation of statistics on mineral duction. The *Water Branch* administers the Water Act, is responsible for the use and cation of all surface, ground and shore waters and for pollution control measures and plements policy matters as determined by the New Brunswick Water Authority. A gional Office located at Bathurst, staffed by geologists and inspectors, serves as a record- office for northeastern New Brunswick and another at St. George, staffed by a senior logist, conducts regional work and assists exploration companies and prospectors work- in the southwestern area. Claim maps and topographical, geological and aeromagnetic ps are available for perusal and distribution.

Quebec.—Through its Director-General of Mines, the Department of Natural sources is responsible for implementing the Mining Act (SQ 1965, c. 34) and the Mining ties Act (SQ 1965, c. 35). The directorate includes the following three branches: ological Services, Mining Services and the Mining Research Centre, as well as the xation, Mining Conflicts and Registry Divisions.

The Geological Services Branch is concerned with geological exploration, mineral posits, mapping and hydrogeology. It conducts studies on the geological composition Quebec territory for the development of mineral resources; following yearly expeditions, ailed reports of the findings and geological maps of different regions are made available the use of interested persons. The Hydrogeology Section conducts studies on and intains an inventory of underground water. The Gas and Oil Section collects and com- es technical information for the use of private companies seeking hydrocarbons.

The Mining Services Branch, consisting of a Mines Service, an Inspection Service and Engineering Service, controls mining concession grants on Crown lands, including claims istrations, developmental work permits and special permits for the sale or rental of lands mining development. It ensures that holders of mining rights live up to the conditions their agreements and inspectors ensure that work in mines, in quarries and in treatment nts is carried out in accordance with safety law and regulations. The Branch undertakes engineering studies required prior to opening up a new mining district or operation, luding the construction of access roads, the building of mining camps or townsites and regulations pertaining to the use of the land in question.

The function of the Mining Research Centre is to assist those interested in prospecting, ning operations or ore treatment by providing technical and scientific services. In lition to chemical, physical, mineralogical and petrographic analyses, the Centre conducts plied research, principally mineralogical, to promote the development of new deposits in ebec and to assist in the technological advancement of mines and quarries already in eration.

The Taxation Division levies duties on mining operations as stipulated in the Mir Duties Act and the Mining Conflicts Division verifies the existence or the validity of cla as provided for in Part VI of the Mining Act.

To provide for the future development of the mining industry, scholarships are gran to students wishing to follow a career in geology, mining and metallurgical engineering well as to students in hydrology or other relevant fields of science (hydro-electricity, hydr lics or meteorology). The Department makes a conscious effort to initiate young stude at the secondary or junior college levels into the mining and geological sciences by second staff members to camps for young scientists to interest them in these disciplines.

Ontario.—The Ontario Department of Mines renders a multiplicity of services direct assistance to the mining industry within the province. The *Geological Branch* car on a continuing program of geological mapping and investigations and prepares, for the of the public, detailed reports and maps of the areas studied. In many active areas of province, resident geologists gather and make available to the public information concern geological conditions, exploration and development within their respective districts. geologist specializing in industrial minerals investigates methods of treatment and recov of such minerals and compiles data on the uses, specifications and markets for such produ During the winter months, courses of instruction for prospectors are held in various cent throughout the province.

The *Laboratory Branch* provides assay and analytical services and conducts mine ogical investigations to aid in the discovery and development of mineral deposits. services are available to the mining industry and the public at large. The Temiskam Testing Laboratory, situated at Cobalt, operates a bulk sampling plant and assay laborat to assist the producers of the area in marketing their silver-cobalt ores.

The *Mining Lands Branch* handles all matters dealing with the recording of min claims, assessment work, etc., and the preparation of title to mining lands. As a service the mining public, individual township maps are prepared and kept up to date, show lands open for staking and recorded and patented claims therein. District Mining I corders maintain offices at strategic locations throughout the province.

The *Inspection Branch* administers the operating rules of the Mining Act which c for the regular examination of all operating mines, quarries, sand and gravel pits and cert metallurgical works with a view to ensuring proper conditions of health and safety to t men employed. District offices to serve the local areas are maintained in the major mini centres of the province. Mine rescue stations in the principal mining sections are opera under the supervision of the Branch and all hoisting ropes in use at mines are periodica tested by a Branch-operated cable-testing laboratory.

The *Finance and Administration Branch* includes an Information Section which carr out a regular publicity and information program and maintains a library of films on mini subjects which are available for free loan to the public. Each year, displays pertaining mining are prepared and presented at exhibitions throughout the province. A new secti has recently been set up within the Branch consisting of two economists and a statisticia the function of which is to provide projections of Ontario's mineral economy for the industr The Publications Office of the Branch is responsible for distribution of all departmen literature and maps.

Since 1951 the Department has been engaged in a road-building program to give acc to mineralized areas and open them for full development. In 1955 this became an int departmental project with other interested departments participating through an interd partmental committee of Ministers which decides on priorities and locations. Actu construction is carried out by the Department of Highways.

Manitoba.—The Mines Branch of the Manitoba Department of Mines and Natur Resources offers four main services of assistance to the mining industry: maintenance, l the Mining Recorder's offices at Winnipeg and The Pas, of all records essential to the gran

and retention of titles to every mineral location in Manitoba; compilation, by the ogical staff of the Branch, of historical and current information pertinent to mineral rrences of interest and expansion of this information by a continuing program of ogical mapping; enforcement of mine safety regulations and, by collaboration with stry, introduction of new practices such as those concerned with mine ventilation the training of mine rescue crews which contribute to the health and welfare of mine kers; and maintenance of a chemical and assay laboratory to assist the prospector the professional man in the classification of rocks and minerals and the evaluation of eral occurrences.

To encourage the exploration for minerals in Manitoba, the Mineral Exploration Assist- Act was passed in April 1966. This Act provides for the payment of advances to indi- als to assist in defraying the cost of exploration within designated areas. If assisted oration results in the discovery of a deposit, the grant is repayable from the profits of mine; a grant for exploration that proves unsuccessful is not repayable.

Saskatchewan.—The *Mineral Lands Branch* of the Department is responsible for ing disposition of all Crown minerals and maintains records respecting areas let out by , permit or claim. Recording offices, located at Regina, La Ronge, Uranium City and ghton, assist the public in determining the lands available and accept applications.

Officers of the *Mines Inspection Branch*, under the authority of the Mines Regulation make regular examinations of all mines to ensure proper conditions for the health and y of the men employed. Safety education, particularly in the form of first aid and rescue instruction, is also a part of the work of this Branch. All Branch officers are oned at the Regina headquarters.

The Precambrian Geology Division of the *Geological Sciences Branch* conducts geological eys in the shield areas of the province and publishes maps and reports for the informa- and guidance of the industry. Resident geologists are maintained at Uranium City La Ronge and at the latter centre a laboratory provides for the storage and examination ore and samples. The Division processes exploration data and assessment work to be e available for inspection by the industry.

Alberta.—Alberta Government assistance to the mining industry is diversified in acter. The Mines Division of the Department of Mines and Minerals regulates coal s and quarries and maintains standards of safety by inspection and certification of kers. The Workmen's Compensation Board also maintains safety standards and the cost of training mine rescue crews. The oil and gas industries are served in a lar way by the Oil and Gas Conservation Board. Its regulatory measures, however, lso concerned with preventing the waste of oil and gas resources and with giving each er of oil and gas rights the opportunity of obtaining a fair share of production. This rd compiles periodic reports and annual records which are of invaluable assistance in oil lopment in Alberta. The mining industry is also served by the Research Council of rta which has made geological surveys of most of the province and has carried forward ects concerned with the uses and development of minerals. The Council has studied occurrence, uses and analyses of Alberta coals and their particular chemical and physical erties, the use of coals in the generation of power, and the upgrading and cleaning of and has also studied briquetting, blending, abrasion loss, shatter and crushing strength, alt binders and dust-proofing of coal. Studies have been made of glass sands, salt, lizers, cement manufacture and brick and tile manufacture. (See also p. 496.)

The province from time to time has had commissions examine various aspects of the ng industry when it has considered that their findings would be of assistance in develop- such industries. The province, together with the Canadian Association of Oil Well ing Contractors and the Canadian Petroleum Association, maintains a detailed super- y and safety training program concerned with the drilling of oil and gas wells. Of

assistance also to mining companies and oil companies are the special reductions vided for in the Alberta Income Tax Act. These follow the parallel provisions in federal Income Tax Act.

British Columbia.—The Department of Mines and Petroleum Resources of Bri Columbia provides the following services: detailed geological mapping as a supplemen the work of the Geological Survey of Canada; free assaying and analytical work for p pectors registered with the Department; assistance to the prospector in the field by dep mental engineers and geologists; grub-stakes, limited to a maximum of $800, for prospect assistance in the construction of mining roads and trails; and inspection of mines to en safe operating conditions.

Section 3.—Mining Legislation

Federal Mining Laws and Regulations.—As of Jan. 1, 1968, the mineral ri vested in the Crown in right of Canada are those situated in the Yukon Territory and Northwest Territories, those in the islands of Hudson Bay and under Hudson Bay Hudson Strait, and those under Canada's continental shelves. The Supreme Court Canada in a recent decision made it clear that, as between Canada and the Provinc British Columbia, the Crown in right of Canada owns and has legislative jurisdiction o "lands, including mines and minerals and other natural resources, of the sea bed and s soil seaward from the ordinary low-water mark on the coast of the mainland and several islands of British Columbia, outside the harbours, bays, estuaries and other sim inland waters to the outer limits of the territorial sea of Canada, as defined in the Te torial Sea and Fishing Zones Act. . .". The Court also decided that the Federal Gov ment owns and has legislative jurisdiction "in respect of the mineral and other natu resources of the sea bed and subsoil beyond that part of the territorial sea of Canada to a depth of 200 meters or, beyond that limit, to where the depth of the superjacent wat admits of the exploitation of the minerals and other natural resources of the said are

In addition, the mineral rights of some small and usually isolated areas scatte throughout the provinces are vested in the Crown in the right of Canada. The Dep ment of Energy, Mines and Resources is responsible for the disposition of mineral rig and for the administration and enforcement of regulations relating to minerals in Canad offshore areas, other than those under Arctic coastal waters, in Hudson Bay, the islands Hudson Bay, Hudson Strait and the small parcels above mentioned. The Department Indian Affairs and Northern Development is similarly responsible in the Yukon Territo the Northwest Territories and the offshore rights under Arctic coastal waters; this Dep ment also acts as adviser to Indian bands in Indian reserves and is responsible for the ministration and enforcement of the relevant regulations.

Mineral rights of Indian reserves in the provinces are also vested in the Crown in right of Canada and are administered by the Indian Affairs Branch of the Department Indian Affairs and Northern Development. The minerals on an Indian reserve may developed under the Indian Oil and Gas Regulations or the Indian Mining Regulations the benefit of the band of Indians having rights to the reserve, only after the band has gi approval by referendum. Indian band councils are encouraged to take a share of resp sibility in the management of their mineral resources.

Mining exploration is carried out in the Yukon Territory in accordance with provisions of the Yukon Quartz Mining Act and the Yukon Placer Mining Act; in Northwest Territories, including Arctic coastal waters, operations are governed by Canada Mining Regulations 1961, as amended. There are also the Territorial Dredg Regulations, Territorial Coal Regulations and Territorial Quarrying Regulations comm to both territories. In the Yukon Territory, mining rights may be acquired by staki

ims under the appropriate Acts or Regulations. A one-year lease may be obtained to spect for the purposes of placer mining, renewable for two additional periods of one ar each; a 21-year lease, renewable for a like period, may be obtained under the Yukon artz Mining Act.

Under the Canada Mining Regulations, a prospector's licence is required. Staked ims must be converted to lease or relinquished within ten years. In certain areas, a tem of exploration by permit over large areas is allowed. Any individual over 18 years age or any joint-stock company incorporated or licensed to do business in Canada may d a prospector's licence. No lease will be granted to an individual unless the Minister the Department involved is satisfied that the applicant is a Canadian citizen and will be beneficial owner of any interest acquired under such lease; no lease will be granted to a poration unless such corporation is incorporated in Canada and registered under Part I of the Companies Ordinance (ONWT 1968, c. 1) and unless the Minister is satisfied t at least 50 p.c. of the issued shares of the corporation are owned by Canadian citizens that the shares of the corporation are listed on a recognized Canadian stock exchange and t Canadians will have the opportunity of participating in the financing and ownership the corporation. Any new mine beginning production after the Canada Mining Regulans came into force in 1961 will not be required to pay royalties for a period of 36 months, rting from the day the mine comes into production. Production date is established as date determined under the provisions of the Income Tax Act.

An exploration assistance fund for petroleum and other minerals in the Yukon and rthwest Territories was established by the Federal Government in 1966. Initially ited to $3,000,000 a year, the fund may provide 40 p.c. of the cost of approved explorn programs. Assistance is available only to Canadian citizens or companies incorated in Canada. Named the Northern Mineral Exploration Program, it is designed to ourage investment from additional Canadian sources previously not attracted to investnt in northern exploration operations.

Oil and Gas Legislation.—The Canada Oil and Gas Land Regulations and the Canada and Gas Drilling and Production Regulations, issued pursuant to the Territorial Lands and the Public Lands Grants Act, regulate the disposition of oil and gas rights and ulate exploration and development in the Yukon Territory, the Northwest Territories the offshore areas of the continental shelves, but not under lands within any provinces. y subsurface rights and those beneath the sea bed are granted. When required, surface hts are negotiated separately. An exploratory permit may be granted and such permit ed on or after Jan. 1, 1968, depending on the area covered thereby, is valid for a term of ee, four or six years; a permit is renewable for one-year periods up to six times by the ief of the Resources Management Division, Resource and Economic Group, Department Indian Affairs and Northern Development, and further renewals may be granted by the hister. Leases, which are renewable if oil or gas is still able to be produced, must conm to prescribed land patterns but must not exceed 50 p.c. of the area of an exploratory mit area.

An oil and gas exploratory permit may be issued to any individual over 21 years of or to any joint-stock company incorporated or licensed to do business in Canada, or rporated in any province of Canada. Extraterritorial companies applying for permits he Northwest Territories must be registered under Part VII of the Companies Ordinance. oil and gas lease granted to a permittee will be issued to an individual unless the Minister he Department involved is satisfied that the applicant is a Canadian citizen and will be beneficial owner of any interest acquired under such lease, or to a corporation unless the hister is satisfied that at least 50 p.c. of the issued shares of the corporation are beneally owned by persons who are Canadian citizens or that the shares of the corporation are d on a recognized Canadian stock exchange, and that Canadians will have an opportuy of participating in the financing and ownership of the corporation.

The Oil and Gas Production and Conservation Act (SC 1969, c. 48), given Royal Asse on June 27, 1969, applied to lands in the Yukon and Northwest Territories; a 1970 amen ment (SC 1969-70, c. 43) extends the provisions of the Act to oil and gas in areas beyo the Territories that do not lie within the geographical or administrative control of any the provinces. An Oil and Gas Committee of five members appointed by the Governor Council is empowered to hold enquiries, to hear appeals, and to make orders in connecti therewith.

Provincial Mining Laws and Regulations.*—In general, all Crown mineral lan lying within the boundaries of the several provinces (with the exception of those with Indian reserves, national parks and other lands which are under the jurisdiction of t Federal Government) are administered by the respective provincial governments. T exception is Quebec where all mineral lands except those granted to individuals in the tow ships prior to 1880 are administered by the province; also, mining rights on federal lands Quebec are administered by the province.

The granting of land in any province except Ontario no longer automatically carri with it mining rights upon or under such land. In Ontario, mineral rights are express reserved if they are not to be included. In Nova Scotia, no mineral rights belong to t owner of the land except those pertaining to gypsum, agricultural limestone and buildi materials, and the Lieutenant-Governor in Council may declare deposits of either limesto or building materials to be minerals. Such declaration is to be based on economic value to serve the public interest. In such case, the initial privilege of acquiring the declar minerals lies with the owner of the surface rights who must then conform with the requir ments of the Mines Act. In Newfoundland, mineral and quarry rights are express reserved. Some early grants in British Columbia, Alberta, Saskatchewan, Manitob New Brunswick, Quebec and Newfoundland also included certain mineral rights. Othe wise, mining rights must be obtained separately by lease or grant from the provinci authority administering the mining laws and regulations. Mining activities may be class fied as placer, general minerals (or veined minerals and bedded minerals), fuels (co petroleum and gas) and quarrying. Provincial mining regulations under these divisio are summarized in the following paragraphs.

Placer.—In most provinces in which placer deposits occur there are regulatio defining the size of placer holdings, the terms under which they may be acquired an held, and the royalties to be paid.

General Minerals.—These minerals are sometimes described as quartz, lode, or minera in place. With the exception of British Columbia, the most elaborate laws and regulatio apply in this division. In all provinces except Alberta and Saskatchewan, a prospector or miner's licence, valid for one year, must be obtained to search for mineral deposits, t licence being general in some areas but limited in others; a claim of promising ground of specified size may then be staked. In Manitoba and British Columbia a licence is requir only for staking and any number of dispositions may be staked under one licence. claim must be recorded within a time limit and payment of recording fees made, except i Quebec where no fees are required. Work to a specified value per annum must be perform upon the claim for a period of up to ten years except in Quebec where a development licen may be renewed on a yearly basis; also in Manitoba and Saskatchewan there is no wor commitment in the first year of the claim. There is no time limit in British Columbi but $500 assessment work, of which a survey may represent two fifths, must be perform and recorded before a lease may be obtained. In Quebec, a specified number of man-hou of work must be performed and the excess may be carried forward for renewal of licen The taxation applied most frequently is a percentage of net profits of producing mines royalties. In Saskatchewan, subsurface mineral regulations covering non-metallics stipu

* Compiled from material supplied by the provincial governments.

e the size and type of dispositions that may be made in order to maintain the disposition good standing, provide for fees, rentals and royalties, and set out generally the rights and ligations of the disposition holder.

Fuels.—In provinces where coal occurs, the size of holdings is laid down together with e conditions of work and rental under which they may be held. In Quebec, the search and development of petroleum and natural gas may be carried out under a prospecting search permit followed by a working lease; the search permit covers a period of five years d an acreage of not over 60,000 acres, whereas the lease extends over a 20-year period and acreage not over half the acreage of the permit. In Nova Scotia, mining rights to rtain minerals, including petroleum, occurring under differing conditions may be held by fferent licensees. Provision is sometimes made for royalties. Acts or regulations govern ethods of production. In the search for petroleum and natural gas, an exploration permit reservation is usually required; however, in Manitoba, Saskatchewan, Alberta and itish Columbia leases usually follow the exploration reservation whether or not any scovery of oil or gas is made. In Alberta, exploration costs are applicable in part on the st year's lease rental, in Manitoba they may be applied to the lease rental for a period up to three years and, in British Columbia and Saskatchewan, credit is given for up to months' rental, having regard to the amount of excess credit established. In other ovinces, the discovery of oil or gas is usually prerequisite to obtaining a lease or grant of limited area, subject to carrying out drilling obligations and paying a rental, a fee, or a yalty on production.

Quarrying.—Regulations under this heading define the size of holdings and the terms lease or grant. In Nova Scotia, sand deposits of a quality suitable for uses other than ilding purposes and limestone deposits of metallurgical grade belong to the Crown; psum quarries belong to the owner of the property. Under the New Brunswick Quar-ble Substances Act, 1968, quarriable substances (ordinary stone, building and construc-n stone, sand, gravel, peat and peat moss) are vested in the owner of the land in or on hich they lie; the Minister with the approval of the Lieutenant-Governor in Council may signate a shore area lying outside Crown land to be subject to the Act; and no person all take or remove or cause to be taken or removed more than one half cubic yard of a arriable substance from Crown land or a designated shore area without obtaining a rmit or lease. On Quebec public lands and on those granted to individuals after Jan. 1, 66, the stone, sand and gravel, like other building materials, belong to the Crown; quarries cated on land granted to individuals prior to 1966 remain in the possession of the owners the surface; the right to exploit all building materials except sand and gravel may be quired by ordinary staking-out and the right to work sand and gravel beds is set by regula-n. In Saskatchewan, sand and gravel on the surface and all sand and gravel obtainable stripping off the overburden or other surface operation belong to the owner of the surface the land. In Alberta, sand, gravel, clay and marl recovered by excavating from the rface belong to the owner of the surface of the land.

Copies of mining legislation including regulations and other details may be obtained m the provincial authorities concerned.

Section 4.—World Production of Certain Metallic Minerals and Fuels

Table 33 shows the production of certain metallic minerals and fuels in the different untries of the world for the year 1968. These figures are taken from the *United Nations atistical Yearbook 1969* which presents production figures for a much more extensive list mining and quarrying industries.

33.—World Production of Certain Metallic Minerals and Fuels, 1968

NOTE.—Where dashes occur throughout this table they indicate that no figures were given in the *United Nati Statistical Yearbook* either because there was no production or because the quantity was not available.

Country	Crude Petroleum	Copper	Nickel	Iron Ore	Zinc	Natural Gas	Asbestos	Gold
	'000 metric tons	'000 metric tons	metric tons	'000 metric tons	'000 metric tons	'000,000 cu. metres	'000 metric tons	kilo-gramm
Afghanistan	—	—	—	—	—	1,600	—	—
Albania	1,046	6.0	—	—	—	—	—	—
Algeria	42,168	0.8	—	1,664	15.4	2,478	—	—
Angola	750	—	—	1,995	—	—	—	—
Argentina	17,457	—	—	—	26.3	5,346	—	—
Australia	1,766	108.6	4,646	17,036	420.1	6	0.8	24,48
Austria	2,724	2.1	—	1,118	12.6	1,630	—	—
Bahrain	3,773	—	—	—	—	—	—	—
Barbados	—	—	—	—	—	3	—	—
Belgium	—	—	—	25	—	65	—	—
Bolivia	1,897	6.9[1]	—	—	11.2[1]	76	—	2,12
Brazil	7,682	4.9	1,287	17,084	—	983	345.4	5,29
Britain	81	—	—	3,902	—	2,199	—	—
Brunei	5,978	—	—	—	—	213	—	—
Bulgaria	475	37.3	—	870	74.5	506	2.1	—
Burma	729	0.1	29	1	4.5	11	—	—
Cameroon	—	—	—	—	—	—	—	1
Canada	51,197	562.5	239,359	27,349	1,155.1	54,154	1,447.9	85,48
Chile	1,785	666.7	—	7,428	1.3	1,934	—	1,79
China—								
Mainland	15,000	90.0	—	20,900	100.0	—	150.0	—
Taiwan	60	2.2	—	—	—	704	1.2	65
Colombia	8,829	—	—	538	—	1,213	—	7,45
Congo—								
Brazzaville	43	—	—	—	1.6	—	—	—
Democratic Republic of	—	326.0	—	—	119.3	—	—	5,287
Cuba	104	—	—	—	—	—	—	—
Cyprus	—	21.9[1]	—	—	—	—	19.3	—
Czechoslovakia	205	4.5	—	445	—	1,108	—	—
Denmark	—	—	—	8	—	—	—	—
Ecuador	233	—	—	—	—	—	—	26
Ethiopia	—	—	—	—	—	—	—	1,11
Fiji Islands	—	—	—	—	—	—	—	3,330
Finland	—	—	—	353	—	—	—	665
France	2,688	—	—	17,952	21.1	5,682	—	1,818
French Guiana	—	—	—	—	—	—	—	159
Gabon	4,642	—	—	—	—	24	—	514
Germany—								
Eastern	—	—	—	354	10.0	—	—	—
Federal Republic of	7,982	1.3	—	2,064	117.5	7,064	—	31
Ghana	—	—	—	—	—	—	—	22,616
Greece	—	—	—	103	10.6	—	—	—
Guyana	—	—	—	—	—	—	—	127
Haiti	—	1.6	—	—	—	—	—	—
Honduras	—	—	—	—	—	—	—	191
Hong Kong	—	—	—	90	—	—	—	—
Hungary	1,807	0.3	—	161	4.3	2,691	—	—
India	5,773	10.1	—	17,040	7.1	392	9.1	3,588
Indonesia	29,712	—	7,859	—	—	—	—	186
Iran	140,480	12.0	—	1	25.0	1,572	—	—
Iraq	73,775	—	—	—	—	—	—	—
Ireland	—	6.5	—	—	53.3	—	—	—
Israel	2,142	10.3	—	—	—	142	—	—
Italy	1,507	2.5	—	359	137.1	10,408	103.4	—
Japan	782	119.9	—	1,249	264.3	2,307	22.3	7,419
Kenya	—	—	—	—	—	—	—	994
Korea—								
North	—	12.0	—	3,500	115.0	—	—	—
Republic of	—	1.1	—	415	19.3	—	3.3	1,708
Kuwait	121,975	—	—	—	—	3,249	—	—
Liberia	—	—	—	13,292	—	—	—	100
Libya	125,539	—	—	—	—	—	—	—
Luxembourg	—	—	—	1,749	—	—	—	—
Madagascar	—	—	—	—	—	—	—	15

[1] Exports.

33.—World Production of Certain Metallic Minerals and Fuels, 1968—concluded

Country	Crude Petroleum	Copper	Nickel	Iron Ore	Zinc	Natural Gas	Asbestos	Gold
	'000 metric tons	'000 metric tons	metric tons	'000 metric tons	'000 metric tons	'000,000 cu. metres	'000 metric tons	kilo-grammes
ysia—								
st (Sarawak)	202	—	—	—	—	—	—	85
st	—	—	—	2,893	—	—	—	74
itania	—	—	—	5,006[1]	—	—	—	—
co	20,345	61.1	—	1,921	240.0	16,335	—	5,504
cco	89	2.5	300	486	32.2	11	—	—
at and Oman	12,012	—	—	—	—	—	—	—
ibia	—	—	—	—	60.0	—	—	—
erlands	2,147	—	—	—	—	14,091	—	—
tral Zone (jointly ared by Saudi Arabia d Kuwait)	22,923	—	—	—	—	—	—	—
Caledonia	—	—	160,000	103	—	—	—	—
Guinea (Australia)	—	—	—	—	—	—	—	812
Zealand	—	—	—	2	—	—	—	268
ragua	—	11.7	—	—	—	—	—	6,003
eria	7,298	—	—	—	—	145	—	7
way	—	16.6	—	2,403	11.7	—	—	—
stan	512	—	—	—	—	2,230	—	—
a	—	—	—	—	—	—	—	1
	3,613	194.5	—	5,126	332.9	476	—	2,566
ppines	—	110.3	—	827	2.2	—	—	16,403
nd	475	19.5	1,500	834	218.8	2,558	—	—
ugal	—	4.5	—	98	0.4	—	—	581
r	16,363	—	—	—	—	—	—	—
ania	13,285	—	—	773	—	21,737	—	—
nda	—	—	—	—	—	1	—	—
i Arabia	141,004	—	—	—	—	—	—	—
a Leone	—	—	—	1,800	—	—	—	—
h Africa	—	127.7	5,900	5,284	—	—	236.3	966,880
hern Rhodesia	—	18.1	—	—	—	—	—	—
n	127	8.4	—	3,062	74.6	—	—	—
n	—	—	—	—	—	—	—	6
nam	—	—	—	—	—	—	—	146
iland	—	—	—	1,292	—	—	38.5	—
len	—	18.2	—	20,299	81.3	—	—	1,547
a	833	—	—	—	—	—	—	—
ania, United Republic								
	—	—	—	—	—	—	—	544
land	—	—	—	302	—	—	—	—
dad and Tobago	9,467	—	—	—	—	1,597	—	—
ial Oman	24,318	—	—	—	—	—	—	—
sia	3,191	—	—	554	3.9	9	—	—
tey	3,104	25.3	—	1,249	14.8	—	3.7	—
nda	—	15.2	—	—	—	—	—	—
n of Soviet Socialist publics	309,150	800.0	95,000	92,000	540.0	169,101	800.0	—
ed Arab Republic	9,000	—	—	224	—	—	2.6	—
ed States	449,885	1,092.8	17,530	50,172	480.3	547,152	109.5	45,980
zuela	189,206	—	—	9,922	—	7,754	—	641
oslavia	2,494	70.5	—	1,056	95.5	584	10.4	2,152
bia	—	684.9	—	—	67.3	—	—	156

[1] Exports.

CHAPTER XV.—ELECTRIC POWER*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

Section 1.—Electric Power Development

Subsection 1.—Historical and Current Trends in Power Development

Electric power development in Canada has undergone remarkable and sustaine growth since the beginning of the century. From a modest 133,000 kilowatts of generatin capacity installed at the end of 1900, Canada's installed hydro capacity rose to 27,114,00 kw. by the end of 1969 and thermal capacity to almost 12,724,000 kw.

The facing chart shows the expansion in installed generating capacity in hydro an thermal stations that has taken place since 1920. Thermal-electric power developmer in Canada was not well documented early in the century but it is apparent that its growt was slow and of relatively minor importance until the late 1940s. The rate of develo ment of hydro facilities, on the other hand, tended to accelerate after the turn of the centur when improvements in electric power transmission techniques were introduced and increa ing emphasis began to be placed on the construction of large hydro-electric stations.

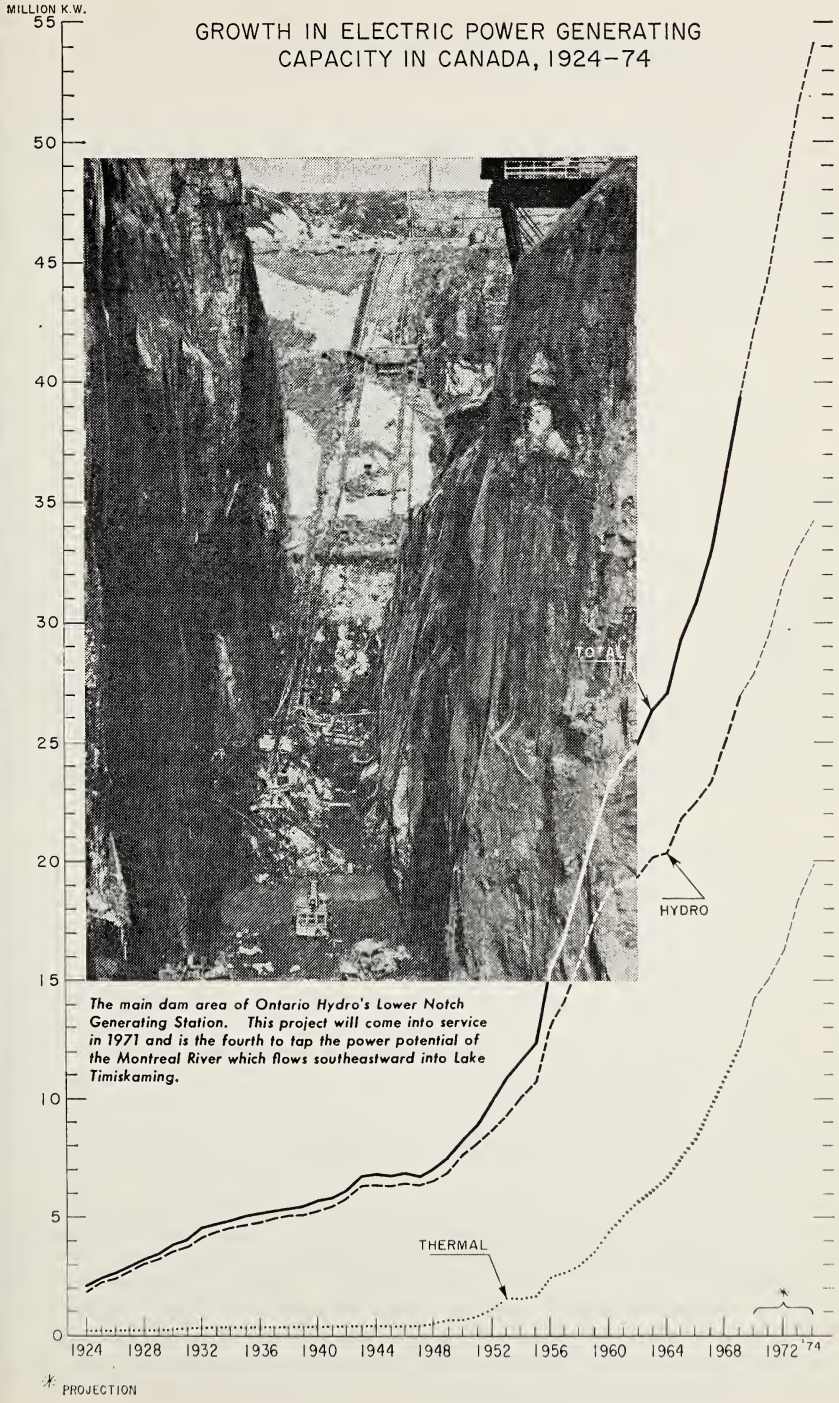
During the prosperous 1920s, demand for electricity became heavier and the rate c installation increased appreciably. Then, under the depressed conditions of the earl 1930s, power demand dropped off but did not show up immediately as a drop in the install tion rate because of the time lag inherent in hydro-electric power development. Th completion of hydro projects initiated prior to the depression period accounted for th continuation of a high rate of capacity installation up until 1935; thereafter, poor economi conditions in the 1935-39 period resulted in a reduced rate.

In the early war years, the tremendous demand for power to drive Canada's wa industries accounted for the sharp rise in installation of new generating facilities betwee 1940 and 1943, but in the later war years construction dropped off so that, from 1944 t 1947, a second flattening occurred in the growth curve. After the War, industrial ex pansion and rapidly growing residential and agricultural development placed extreme

* Sections 1 and 2 of this Chapter were prepared by the Department of Energy, Mines and Resources, Ottaw Sections 3 and 4 were revised by the Energy Statistics Section, Industry Division, Dominion Bureau of Statistic and Section 5 by the various provincial Commissions concerned.

GROWTH IN ELECTRIC POWER GENERATING CAPACITY IN CANADA, 1924–74

The main dam area of Ontario Hydro's Lower Notch Generating Station. This project will come into service in 1971 and is the fourth to tap the power potential of the Montreal River which flows southeastward into Lake Timiskaming.



heavy demands on power generating facilities. To stay abreast of these demands require the installation of new capacity at a rate higher than at any time in Canada's history These demands also led to the start of an extensive program of thermal plant constructio in the early 1950s, since they could not be satisfied from hydro sources alone. In 195(thermal generation represented 14 p.c. of installed capacity. Since then, the annual installe capacity has averaged 57 p.c. hydro-electric and the remainder in thermal generation wit the result that at the beginning of 1970 thermal generation accounted for 32 p.c. of Canada' installed capacity.

Table 1 shows the status of installed generating capacity in hydro and thermal station and the combined total for all stations as at Jan. 1, 1970.

1.—Installed Hydro- and Thermal-Electric Generating Capacity, by Province, as at Jan. 1, 1970

Province or Territory	Hydro	Thermal	Total
	kw.	kw.	kw.
Newfoundland	820,000	128,000	948,000
Prince Edward Island	—	77,000	77,000
Nova Scotia	163,000	773,000	936,000
New Brunswick	563,000	652,000	1,215,000
Quebec	12,499,000	764,000	13,263,000
Ontario	6,634,000	5,880,000	12,514,000
Manitoba	1,218,000	504,000	1,722,000
Saskatchewan	584,000	841,000	1,425,000
Alberta	616,000	1,593,000	2,209,000
British Columbia	3,956,000	1,464,000	5,420,000
Yukon Territory	26,000	17,000	43,000
Northwest Territories	35,000	31,000	66,000
Canada	**27,114,000**	**12,724,000**	**39,838,000**
Capacity as at Jan. 1, 1969	24,982,000	11,016,000	35,998,000
Percentage increase during 1969	8.5	15.5	10.7

Current Trends.—Although water power traditionally has been and still is the main source of electric energy in Canada, thermal sources some day will undoubtedly become the main supplier. The choice between development of a hydro-electric power site and construction of a thermal generating station must take into account a number of complex considerations, the most important of which are economic in nature. In the case of a hydro-electric project, the heavy capital costs involved in construction are offset by maintenance and operating costs considerably lower than those for a thermal plant. The long life of a hydro plant and the dependability and flexibility of operation in meeting varying loads are added advantages. Also important is the fact that water is a renewable resource. The thermal station, on the other hand, can be located close to the demand area, with a consequent saving in transmission costs. With the current trend to large steam stations, however, a certain amount of the flexibility of location of thermal stations is lost because such units require considerable quantities of water for cooling purposes, making it essential that they be sited close to an adequate water supply.

The marked trend to thermal development which became apparent in the 1950s can be explained in part by the fact that, by that time in many parts of Canada, most of the hydro-electric sites within economic transmission distance of load centres had been developed and planners had to turn to other sources of electric energy. More recently, however, advances in extra-high-voltage transmission techniques are providing a renewed impetus to the development of hydro power sites previously considered too remote.

Because of the relatively long starting-up time required by large thermal units, thermal stations tend to lack flexibility of operation and can be used most efficiently to meet con-

uous load conditions. Hydro stations, on the other hand, can put generating units on e with minimum delay and hence are admirably suited to supply power to meet the peak ds which may occur several times each day. By combining the advantages of both dro and thermal stations in integrated supply systems, power producers are now achieving ch greater flexibility of operation.

Thermal power generation may use fossil fuels or nuclear fuels as the sources of energy. e fossil fuels—coal, gas or oil—can be obtained economically from domestic sources in ne parts of Canada. In other regions the cost of transportation leads to the use of im- ted fossil fuels. Nuclear fuels are providing an increasingly important source of energy thermal power plants and will be especially attractive for those regions where fossil fuel ts are relatively high and where the power system permits the use of very large generat- units which show the best economic advantage for nuclear plants. The CANDU reactor tem, which is providing the heat source for Canadian nuclear plants, allows the use of ural uranium mined and processed in Canada.

Another trend in development designed to meet the problem of varying daily loads is use of pumped storage. An example is the Sir Adam Beck hydro development at agara Falls where water taken from the Niagara River above the Falls is carried by nel and power canal to penstocks which supply the main generating station on the nk of the Niagara River some distance below the Falls. In off-peak hours, power from main station is used to pump water from the power canal into a reservoir maintained a higher level; during peak-load hours, the pumps, which are dual-purpose units, operate generators and are driven by water released from the reservoir. The pumping-generating ts at this development make available an extra 176,700 kw. of generating capacity. pumping-generating station using the same general principle has been constructed on Brazeau River in Alberta as part of the 305,500-kw. Big Bend hydro development.

Perhaps the most promising application of the pumping-generating principle is its in conjunction with nuclear power stations. Nuclear units, in common with the larger ventional thermal units, can be used most efficiently under conditions of continuous ration. Off-peak nuclear power can be used to operate pump-turbine units and the dro-electric power derived from operating the units as generators is available for use ing periods of peak demand.

Subsection 2.—Utilization of Power

In 1969, Canada's generating facilities produced a total of 190,093,000,000 kilowatt- rs of electric energy, after allowing for the energy used in the power stations themselves. this total, 77.8 p.c. was produced in hydro-electric stations and the remainder in thermal tions. Electric energy exported to the United States exceeded imports by 1,364,000,000 h. during 1969, so that the total energy made available in Canada amounted to ,908,000,000 kwh.

Industry uses approximately 55 p.c. of the total electric energy made available in nada; residential and farm use accounts for 21 p.c. and commercial use 15 p.c. The naining 9 p.c. is listed under "losses and unaccounted for". Because many power producers not distinguish in their records between residential and farm customers, the amount of rgy used is combined. Energy used for street lighting represents less than 1 p.c. of total energy made available and is included in the "commercial category".

About 20 p.c. of the total energy made available is used in the mineral industry, uding smelting and refining, 16 p.c. by the pulp and paper industry and 19 p.c. by other ustries. Of the latter, the chemical industry and the primary iron and steel industry ether consume almost one half. Approximately 75 p.c. of the energy consumed by mineral industry is used in the smelting and refining of metals.

The incidence of large water power resources in those regions in which the more portant mineral deposits have been found has greatly facilitated mining development. cent examples are the nickel mining and refining complex at Thompson, Man., which

uses hydro-electric power generated in the Kelsey plant on the Nelson River, and the ir ore mining operations in Labrador, supplied by the Twin Falls plant on the Unknov River. Metal mining, a very important division of the Canadian mining industry, carried on mainly in two physiographic regions, the Western Cordillera and the Canadi Shield. In the Western Cordillera, the mountainous topography and the relatively hi amounts of precipitation favour the development of water power. In the Canadi Shield, which is a Precambrian formation stretching in a wide sweep around Hudson B from the Mackenzie River basin to the eastern tip of Labrador, heavy glaciation in rece geological times has formed river systems which are comparatively young and are cha acterized by large numbers of lakes connected by short river sections with numerous rapi and falls suitable for the development of hydro-electric power.

Canada has no known deposits of bauxite but the availability of low-cost hydr electric power has fostered the establishment of a large aluminum industry that produc one eighth of the world's supply of this metal, most of which is exported from Canad Further evidence of the value of water power to mining operations is provided by the fa that Canada's asbestos industry, which produces about 35 p.c. of the world's supply asbestos fibre, obtains the major part of its power supply from hydro-electric sources.

Canada's pulp and paper industry is one of the world's great industrial enterpris Total mill capacity for the production of newsprint paper is considerably greater than th of any other country in the world, and in total production of wood pulp Canada is secor only to the United States. The fact that about 90 p.c. of the manufactured newsprint exported gives some indication of the importance of the industry to the Canadian econom By far the larger portion of the energy used in the pulp and paper industry is derived fro water power.

Subsection 3.—Water Power Resources, Undeveloped and Developed

Table 2 presents a summary of developed water power in Canada and an estimate undeveloped water power potential, based on records maintained by the Inland Wate Branch of the Department of Energy, Mines and Resources. Estimates of available pow are shown for undeveloped sites only; for developed sites, the total generating capaci actually installed is indicated. It should be noted that the capacity installed at an existin hydro-electric development is frequently in excess of the continuous power available the site. The relationship between installation and available power is explained on p. 74

2.—Water Power Resources, by Province, as at Jan. 1, 1969

Province or Territory	Undeveloped Water Power			Developed Water Power
	Available Continuous Power at 88 p.c. Efficiency			Installed Generating Capacity
	at Q95[1]	at Q50[2]	at Qm[3]	
	kw.	kw.	kw.	kw.
Newfoundland	1,195,000	3,450,000	4,641,000	820,000
Prince Edward Island	—	1,000	2,000	—
Nova Scotia	21,000	112,000	161,000	163,000
New Brunswick	29,000	106,000	276,000	563,000
Quebec	7,791,000	27,657,000	36,276,000	11,049,000
Ontario	462,000	1,088,000	1,635,000	6,412,000
Manitoba	2,964,000	5,501,000	5,853,000	1,184,000
Saskatchewan	650,000	1,171,000	1,434,000	584,000
Alberta	895,000	3,244,000	4,866,000	616,000
British Columbia	4,697,000	15,954,000	23,984,000	3,538,000
Yukon Territory	664,000	3,237,000	5,689,000	18,000
Northwest Territories	864,000	2,232,000	3,322,000	35,000
Canada	**20,232,000**	**63,753,000**	**88,139,000**	**24,982,000**

[1] Power equivalent of flow available 95 p.c. of the time. [2] Power equivalent of flow available 50 p.c. the time. [3] Power equivalent of arithmetical mean flow.

Undeveloped Water Power Resources.—Table 2 gives estimates of undeveloped wer based on different rates of flow: the first column indicates continuous power ordin- ly available during periods of low discharge under existing conditions of river flow sed on Q95, which is the natural or modified flow available 95 p.c. of the time; the second umn shows dependable maximum power based on Q50, which is the natural or modified w available for at least 50 p.c. of the time; and the third column shows dependable ximum power based on Qm, the arithmetical mean flow. On rivers for which flow ords are sparse or non-existent, estimates of flow are made from available information ating to run-off in the same general area. The hydraulic head used in calculating un- veloped water power is based on the actual drop or the feasible concentration of head ich has been measured or carefully estimated. Preliminary figures for Quebec supplied the provincial Department of Natural Resources, however, reflect the net river power tential which would result from development of the entire head available on Quebec ers whose drainage areas exceed 3,000 sq. miles.

It should be emphasized that the figures of continuous power at Q95 represent only e minimum water power possibilities in Canada because estimates are based upon existing er flow and, for the most part, do not reflect the benefits of streamflow regulation that uld result from the development of storage potential. Partial regulation is required in st instances to obtain the continuous power available at Q50. On the other hand, the thmetical mean flow figures represent the power that would be obtainable if the entire w in the river could be regulated to provide a continuous flow of constant magnitude. can readily be seen that, because the latter condition assumes complete regulation, imates of potential based upon arithmetical mean flow will, if other pertinent factors e neglected, exceed the amount of capacity that might be expected to be installed at the e, particularly where little or no storage is available. However, recent experience in e development of water power sites has indicated that, in fact, the generating capacities stalled at many sites are very considerably in excess of what might be dictated by even e arithmetical mean flow. Several major river-diversion possibilities exist, particularly British Columbia. For this reason, the estimates of potential of British Columbia's developed hydro resources have recently been boosted substantially, mainly because of e inclusion of figures based upon the diversion of rivers which, if they are developed at , will almost certainly be developed on a combined-river basis.

Developed Water Power Resources.—The figures of installed generating capacity ven in Table 2 are based on the manufacturer's rating in kilowatts as shown on the gen- ator name-plate, or derived from the rating where it is indicated in kilovolt-amperes. ne maximum economic installation at a power site can be determined only by careful nsideration of all the conditions and circumstances pertinent to its individual develop- ent. It is usual practice, however, to install units having a combined capacity in excess the available continuous power at Q50, and frequently in excess of the power available Qm. There are a number of reasons for this. The excess capacity may be installed r use at peak-load periods, to take advantage of periods of high flow, or to facilitate ant or system maintenance. In some instances, storage dams have been built subsequent initial development to smooth out fluctuations in river flows. In other cases, deficiencies power output during periods of low flow have been offset by auxiliary power supplied m thermal plants, or by interconnection with other plants which operate under different ad conditions or are located on rivers with different flow characteristics.

Thus, the extent to which the installed capacity exceeds the available continuous wer at the various rates of flow is dependent upon the factors that govern the system of ant operation, and varies widely in different areas of the country. In some develop- ents, the difference may amount to several hundred per cent. For this reason, dis- etion should be used in comparing the figures in the last column with those in the pre- ding columns, as available continuous power and installed capacity are not directly

comparable. As a rough guide, however, it may be assumed that the power equivale of the flow at Q50 represents an approximate, if conservative, estimate of hydro generati capacity remaining to be installed in Canada.

Provincial and Territorial Distribution.—The provincial and territorial distrib tion of undeveloped water power resources and installed generating capacity, given Table 2, reveals that substantial amounts of water power have been developed in provinces except Prince Edward Island, where water power resources are meagre. natural resource development proceeds, the fortunate incidence of water power in proximi to mineral, forest and other resources becomes increasingly apparent. There is litt doubt that the existence of large amounts of potential hydro power on northern rivers w prove to be a factor of prime importance in the eventual realization of the natural weal of Canada's North.

The water power resources of *Newfoundland*, determined on the basis of the limite available streamflow data, are estimated to be of very considerable magnitude. On t Island, although the length of the rivers is generally not great, topography and run- are favourable for hydro-electric power development. Of the substantial capacity i stalled, a very large portion serves the pulp and paper industry. In Labrador, the Church River and its tributaries, now under development, constitute one of the largest potenti sources of water power in Canada.

In *Prince Edward Island* there are no large streams and water power plants are limite in size to those used to operate small mills. The water power resources of *Nova Scotia* a *New Brunswick*, although small in comparison with those of other provinces, are a valuab source of energy and make a substantial contribution to the economies of the two province Numerous rivers in both provinces provide moderate-sized power sites either withi economic transmission distance of the principal cities and towns or advantageously situate for use in development of the timber and mineral resources. These provinces are al favoured with abundant indigenous coal supplies.

Quebec is the richest of all the provinces in water power resources, possessing mo than 40 p.c. of the total recorded for Canada. Quebec also leads in developed water powe its installation of 12,499,000 kw. in 1970 representing about 46 p.c. of the national tota Notable developments are the Quebec Hydro-Electric Commission's 1,574,260-kw. Bea harnois development on the St. Lawrence River, the Commission's 1,015,200-kw. Manic development on the Manicouagan River, and its Bersimis I development on the Bersim River having an installed capacity of 912,000 kw.; the Aluminum Company of Cana Limited owns the 742,500-kw. Chute des Passes plant on the Peribonca River. Th Manic 2 development is part of a major power project which represents a significa advance in the development of Quebec's hydro-electric resources. This project, involvin the harnessing of the headwaters of the Manicouagan and Outardes Rivers, will permit th eventual installation of some 5,540,000 kw. on the two rivers; a total installation of 2,942,00 kw. was in service at the beginning of 1970. Power production in the province is facilitate by the regulation of streamflow by the provincial Department of Natural Resources throug the storage dams which it owns and operates. Some of the responsibility for regulatio rests with the Quebec Hydro-Electric Commission.

Almost all of the sizable water power potential in *Ontario* within easy reach of deman centres has been developed and planners are looking to the more remote sites as ne sources of supply. Improvements in long-distance transmission techniques have brough many of these sites within the economic orbit of demand centres. Several sites are bein developed and a number of others are under investigation. Most of the hydro-electri power produced in the province comes from the generators of The Hydro-Electric Powe Commission of Ontario, Canada's largest power producing and distributing organizatio Ontario's largest hydro-electric generating station is located on the Niagara River a Queenston, where the Sir Adam Beck-Niagara Generating Stations Nos. 1 and 2 and th associated pumping-generating station have a combined generating capacity of 1,804,200 kw

n addition to the power generated in its own plants, the Commission purchased electric ower generated outside the province to the extent of 6 p.c. of its total requirements in 1969.

Of the three Prairie Provinces, *Manitoba*, with immense hydro-electric capabilities on he Winnipeg, Churchill, Nelson and Saskatchewan Rivers, is the most generously endowed ith water power resources. Until recently, hydro-electric generating stations on the Vinnipeg River supplied most of the power requirements of southern Manitoba. Manitoba Hydro's high-voltage, long-distance transmission lines, however, will carry ever-increasing mounts of power south from hydro-electric stations on northern rivers to help meet the rovince's constantly growing power demands. Of particular interest is the initial develop- ient of the Nelson River System. The Kettle Rapids site is being developed toward an ltimate capacity of 1,219,200 kw. and power will be transmitted over a 556-mile high- oltage direct current transmission system at ±450 kilovolts to a receiving station near Vinnipeg. Large water power resources exist in the central and northern parts of *askatchewan*, principally on the Churchill, Fond du Lac, and Saskatchewan Rivers. Power rom Squaw Rapids on the Saskatchewan River is fed into the transmission network of the rovincially owned Saskatchewan Power Corporation, which serves the more settled areas f the province. Before the completion of this development in 1963, these areas had been erved by electric power from thermal plants fuelled by coal, oil or natural gas, the hydro- lectric power generated in the province being used almost exclusively for mining purposes n northern areas. In *Alberta*, most of the principal hydro-electric developments are located n the Bow River and its tributaries and, from these developments, Calgary Power Ltd. erves most of the southern part of the province. The Big Bend hydro-electric development n the Brazeau River in the headwaters of the North Saskatchewan River, completed in 967, augmented the energy from the Bow River plants and another development on that iver at Bighorn will add 108,000 kw. in 1972. Substantial water power resources are ocated in the northern regions and, although these are somewhat remote from present entres of population, the advent of extra-high-voltage transmission has enhanced the rospect of their development.

British Columbia has many mountain streams that offer abundant opportunity for he development of hydro-electric power. In terms of recorded available water power esources, developed and undeveloped, the province ranks second in Canada and is exceeded nly by Quebec and Ontario in the amount of generating capacity installed. Notable for he magnitude of their power potential are such rivers as the Columbia, the Fraser, the eace and the Stikine. Until recently, however, hydro-electric developments on smaller ivers in the southern areas have satisfied the major load requirements of the province but n 1968 the immense power resources of the Peace River began to supplement the energy upply. Development of the hydro potential of the Canadian portion of the Columbia iver is being planned, utilizing the water stored behind three huge storage reservoirs, wo of which have been completed. The foremost producer and distributor of electric ower in British Columbia is the provincially owned British Columbia Hydro and Power uthority.

Power from present developments in the *Yukon Territory* and the *Northwest Territories* used largely to satisfy the needs of local mines and adjacent settlements. To date, ossil fuel resources have not provided any significant contribution to electric power supply. he Northern Canada Power Commission is authorized to construct and manage public tility plants in both Territories. In the Yukon Territory, most of the resources are located n the Yukon River and its tributaries, and these represent some of the largest undeveloped ydro-electric resources in North America. In addition to developments within the Upper ukon River basin, there are attractive development opportunities being explored which nvolve the diversion of some of the headwaters of the Yukon River through the Coast Mountains to tidewater. Other hydro-electric resources in the Territories have been eviewed to establish an inventory of available developments which include, in addition to tes on the Yukon River tributaries, potential developments on the Lockhart and Copper- ine Rivers. The South Nahanni River also has a significant development potential.

Subsection 4.—Thermal Power Generation

The incidence of immense water power resources in Canada and the brisk pace of the development has tended to overshadow the very considerable contribution being made b thermal energy in the nation's power economy. At the end of 1969, the total installe thermal capacity in Canada was 12,724,000 kw., about 32 p.c. of the total electric generatin capacity in the country. The fact that energy produced in thermal plants during the yea accounted for only 22 p.c. of the total may be attributed in part to the fact that a considerabl amount of the capacity installed is operated for peak-load duty, with hydro-electric capacit providing base load generation. This pattern will change with the introduction of additiona nuclear-fuelled thermal generation plants which can be operated economically at hig capacity factors for base load purposes.

Conventional Thermal Power.—Over 90 p.c. of all thermal power generatin equipment in Canada is driven by steam turbines. The magnitude of the loads bein carried by steam plants has led to the installation of steam units with capacities as high a 500,000 kw. The remainder of the load is carried by gas turbine and internal combustio equipment. The flexibility of internal combustion engines makes this type of equipmen particularly suitable for meeting power loads in smaller centres, especially in the mor isolated areas.

Table 1, p. 742, shows that thermal generation is predominant in Prince Edwar Island and Nova Scotia, and also that in Alberta, Saskatchewan and New Brunswick mor than half of the installed capacity is thermal. Ontario still had more hydro than therma capacity at the beginning of 1970 but this situation will be reversed by the end of the yea and thereafter thermal generation will be predominant in that province.

Thermal capacity in Newfoundland has, to date, consisted of smaller internal combus tion stations serving more isolated communities together with a few medium-sized ga turbine and steam turbine units in larger centres. Construction of the province's firs thermal station at Holyrood is to be completed in 1970; its two 150,000-kw. steam unit will be fuelled by residual oil from a nearby refinery. Although coal is still the mos important fossil fuel for thermal plants in Nova Scotia, oil is rapidly becoming the preferre choice for thermal power generation in all of the Atlantic Provinces.

The abundance of Quebec's water power wealth, much of it within economic trans mission distance of existing demand areas, has so far limited the application of therma power to specific local use. However, the growing emphasis on thermal power in othe parts of Canada is also beginning to be apparent in Quebec, where thermal capacity wil serve not only to help guarantee an adequate power supply in the face of increasingly heavy demands but also to render the almost exclusively hydro-electric base more flexibl through integrated operation. Quebec's largest thermal plant, the Tracy Station nea Sorel, has an installed capacity of 600,000 kw.

Ontario has more thermal capacity than any other province in Canada; capacity installe at the beginning of 1970 was 5,880,000 kw., which was about 46 p.c. of the national total Ontario Hydro's Lakeview station at Toronto is Canada's largest thermal generating station, having an installed capacity of 2,430,000 kw. The Lambton station near Sarnia will reac its designed capacity of 2,000,000 kw. in 1970. Two more thermal stations are planned with final capacities of 4,000,000 kw. (at Nanticoke near Port Dover) and 2,295,000 kw. (at Lennox, west of Kingston). With the exception of Lennox which will use oil fuel, Ontario's fossil-fuelled thermal power plants are designed to be coal-fired.

Manitoba supplements its predominantly hydro-based power supply with a substantial amount of thermal capacity but current emphasis is on development of water power re sources. Saskatchewan, until recently, relied on thermal capacity to satisfy the needs of the more settled areas and hydro-electric power generated in the province was used almost exclusively for mining purposes in the northern areas. In the past few years, however, development of storage on the Saskatchewan River has made hydro-electric power

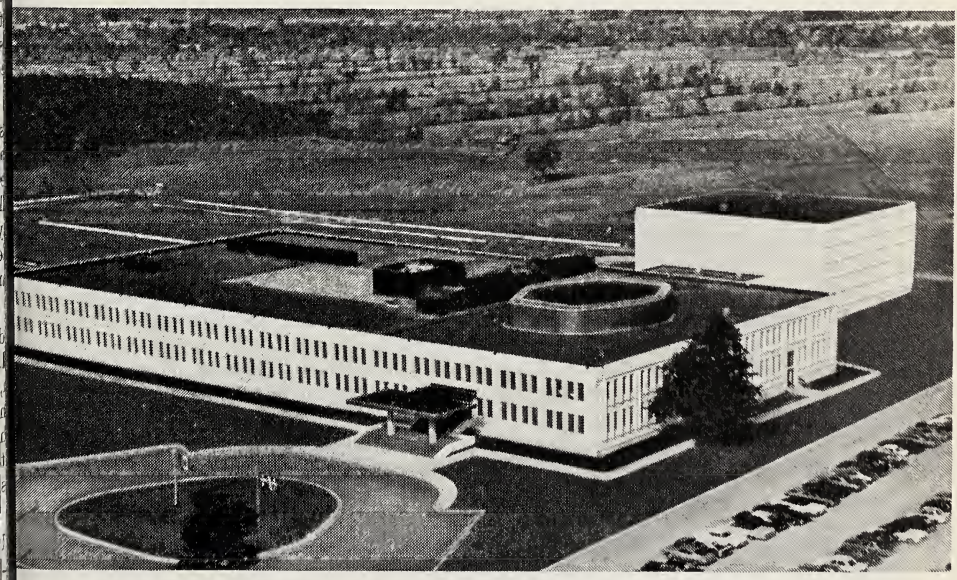
om Squaw Rapids and Coteau Creek available in the southern part of the province. hermal generation will provide the next stage of expansion with extensions under way at oundary Dam (Estevan) and Queen Elizabeth (Saskatoon) stations. The incidence of ast fuel resources accounts for the emphasis on thermal power generation in Alberta; the rovince's largest thermal plants are the 405,000-kw. gas turbine and steam station at dmonton and the 582,000-kw. Wabamun steam station. Planned expansion includes a 0,000-kw. unit at Sundance (near Wabamun) and two 165,000-kw. units at Clover Bar ear Edmonton).

About two thirds of British Columbia's thermal generating capacity is installed in ree plants located in the Vancouver area. The capacity of the largest of these plants, e Burrard generating station, is 750,000 kw.

Until 1965, most of the power requirements of the Northwest Territories were satisfied om thermal sources but the commissioning of the Twin Gorges hydro station on the altson River in that year altered the balance in favour of hydro. In Yukon Territory, ydro is the larger contributor. Virtually all of the thermal-electric energy in the Territories generated by small diesel units.

Nuclear Thermal Power.—Commercial electric power generated from the heat of uclear reaction became a reality in Canada in 1962 when the 20,000-kw. (electricity) Nuclear ower Demonstration station at Rolphton, Ont., fed power for the first time into a stribution system in Ontario. The NPD station is the forerunner in a series of large uclear stations that will shoulder more and more of Canada's rapidly growing power loads.

Research into reactor design and the application of nuclear energy in the electric ower field are among the more important responsibilities of Atomic Energy of Canada



Gentilly nuclear station, located on the south bank of the St. Lawrence River mid-way between Montreal and Quebec City, is scheduled to begin generating electricity in 1971. It is owned by Atomic Energy of Canada Limited, the Canadian Government nuclear agency, and will be operated, and eventually purchased, by Hydro-Quebec.

Limited, a Crown company incorporated in 1952 (see also pp. 480-487). AECL l concentrated its efforts on the development of the CANDU reactor, which uses natu uranium as a fuel and heavy water as the moderator. By using heavy water as the mode tor, a high energy yield can be obtained from natural uranium and, since natural urani is a low-cost nuclear fuel, the cost of fuel is a minor component in the cost of produci power. Natural uranium has the added attraction of being available in commerc quantities in Canada.

The NPD station has been used extensively to demonstrate the ability of the syst to operate at a high capacity factor and to determine the nature and predictability outages. Fuel changes while the system is in operation have become routine and a co siderable amount of research into the sources of heavy water losses has been carried o As a result of this research, losses have been cut down and the NPD station is demonstrati that a very acceptable heavy water loss rate is attainable. The station was modified 1968 to a boiling heavy water mode of operation to provide additional demonstrati capabilities.

At Douglas Point on the shore of Lake Huron, the country's first full-scale nucl power station went into commercial production in 1967. The station, built with t co-operation of Ontario Hydro, houses a 200,000-kwe. CANDU reactor. Experience gai in the design and operation of this reactor has encouraged the development of even lar units and construction of the four-unit, 2,160,000-kwe. Pickering nuclear station is under w near Toronto, with in-service dates for the units scheduled for 1971 to 1974. Constructi of the Bruce nuclear station for Ontario Hydro is under way with four 800,000-kwe. un planned for installation during 1975 to 1978.

A further step in the development of the CANDU reactor is the use of boiling lig water instead of pressurized heavy water as the coolant. Quebec's Gentilly nuclear stati being constructed near Trois-Rivières will utilize boiling light water in its CANDU reacto This station is scheduled for service in 1971 with 250,000 kwe. of nuclear-electric capaci

Subsection 5.—Electric Power Transmission

The nature of the loads handled by the small, widely scattered generating systems the early days of the electric power industry in Canada did not warrant the expense interconnecting power systems. However, as the demand for dependable electric pow increased and improved techniques reduced power transmission costs, the benefits integrating power systems to achieve reliability of service and flexibility of operation we re-appraised. Today, most of Canada's generating stations are components of lar integrated and often interconnected power systems operated by power utilities and co panies in the various provinces.

Constant research in the field of power transmission has developed techniques th enable power producers to utilize hydro-electric sites previously considered beyond econom transmission distances. Most noticeable, perhaps, is the progressive stepping-up of tra mission-line voltages. In Canada, there are a number of transmission lines designed f operation at 500,000 volts and 735,000 volts. A 574-mile, 500,000-volt line is in servi to carry power from the Peace River to the lower mainland of British Columbia. Ontario, a 435-mile, 500,000-volt line carries power from hydro-electric plants in the Jam Bay watershed to Toronto. In 1965, Hydro Quebec achieved world leadership when pow was carried for the first time at 735,000 volts over the 375-mile transmission line betwe Quebec's Manicouagan-Outardes hydro complex and the cities of Quebec and Montreal.

Most power is transmitted with alternating current but three applications of hig voltage direct current (HVDC) have been found in Canada. In service in British Columb is a 260,000-volt HVDC link from the mainland to Vancouver Island. It has a capacity 312,000 kw. and includes 21 miles of undersea cable; it is a monopolar system using t ground as the return path for current. A second HVDC system is expected to be placed service in 1971 over two 555-mile lines from the Kettle generation station on the Nels

er to Winnipeg. The initial capacity is 810,000 kw. and the planned ultimate rating is 00,000 kw. Another application is designed to provide a non-synchronous tie between systems of New Brunswick and Quebec; this is a 320,000-kw. back-to-back HVDC tem located at Eel River, N.B., which will be placed in service in 1972 and will employ d state thyristor valves in place of the mercury arc valves used for the earlier HVDC tems.

Interconnections of from 66,000 to 230,000 volts exist between British Columbia and erta; Saskatchewan, Manitoba, Ontario and portions of the Quebec system are interected and, through the Ontario Hydro system, are linked with the northeastern ted States systems; and Quebec, New Brunswick and Nova Scotia systems are interected. British Columbia has an international tie with the Pacific northwest (500,000 s) and links with the United States are planned for Manitoba (230,000 volts) and ween the New Brunswick and Maine systems (345,000 volts).

The search for economies in transmission systems has led to changes not only in materials d but also in tower erection and cable-stringing methods. Guyed V-shaped and Y-shaped nsmission towers are being used increasingly in place of self-supporting towers where terrain is suitable, and erection costs are being reduced by the use of helicopters to nsport tower sections to the site for tower assembly. The use of helicopters for spraying rush control on the right-of-way and for line inspection and maintenance is widespread.

ction 2.—Progress in Construction of Generating Facilities, 1969

Additions to electrical generating capacity in 1969 of 3,840,000 kw. raised the total alled capacity in Canada to 39,838,000 kw., an increase of 10.7 p.c. over 1968. This a record year for generation addition, exceeding by 29 p.c. the 1968 figure of 2,968,000 Of the 1969 additions, hydro-electric capacity accounted for 55 p.c., or 2,132,000 kw., thermal generation for the remaining 1,708,000 kw., so that at the end of the year total alled capacity was 68 p.c. hydro electric and 32 p.c. thermal.

The trend to larger unit sizes is indicated by the fact that units of 150,000 kw. or greater ounted for 85 p.c. of the hydro-electric capacity increase in 1969 and for 83 p.c. of the rmal-electric plant additions.

Newfoundland.—Load growth in the Island of Newfoundland will be met by the ition of 153,000 kw. in two units to the Baie d'Espoir hydro plant in 1970 and the first wo 150,000-kw. oil-fired thermal units at Holyrood; the second Holyrood addition is eduled for 1971. In 1969, transmission capacity was increased by the addition of 55 miles 30-kv. line.

In Labrador, the tremendous development at Churchill Falls continued on schedule. t power is planned for 1971 and commercial delivery to Hydro Quebec over the 735-kv. nsmission system for May 1972. A total of 5,225,000 kw. in 11 hydro generator units is eduled to be placed in service by 1976. Studies are under way to determine the feasiy of further generation developments at sites on the river below Churchill Falls.

Prince Edward Island.—No major changes were made in Prince Edward Island in 9. An additional 20,000 kw. of thermal capacity is scheduled for 1971.

Nova Scotia.—Thermal capacity totalling 230,000 kw. was added in 1969 by the va Scotia Power Commission, consisting of a 150,000-kw. extension at Trenton and an 00-kw. unit at Point Tupper; the latter will also supply steam to the nearby Canadian eral Electric heavy water plant. Nova Scotia Light and Power will add a 105,000-kw. to Tufts Cove in 1971.

Transmission expansion in 1969 included 88 miles at 138 kv. An additional 132 miles lanned at this voltage, some of which will be suitable for up-rating to 230 kv.

New Brunswick.—The 100,000-kw. thermal generating unit at Dalhousie was principal addition to plant capacity in 1969 in New Brunswick. Consideration is be given to additions to the Mactaquac hydro station and to extensions of thermal generat capacity.

Transmission expansion planning was very active in 1969. A 320,000-kw. back-to-b direct-current converter terminal was committed for Eel River to provide an interconnect with Hydro Quebec. The equipment will use solid state thyristors and is the first to inv converter valve equipment manufactured in Canada for a high-voltage DC system. interconnection will facilitate the purchase from Quebec of a portion of Churchill F energy, surplus to Quebec's needs, in the period 1972-76 and subsequently allow for econo interchange to the benefit of both provinces.

An agreement was reached with a group of New England utilities for an interconnect which will permit New Brunswick to sell peaking power at advantageous terms. A 345- transmission circuit is planned for this purpose and application has been made to National Energy Board for an export permit.

Quebec.—Major additions in 1969 amounting to 1,388,000 kw. to the Manicouag Outardes development at Outardes 3 and 4, completed nearly 50 p.c. of the total plan generating capacity in this region. By 1972, when an additional 1,322,000 kw. at Mani will be in operation, 70 p.c. of the final 5,540,000 kw. will have been completed. The m recently committed development of 1,176,000 kw. at Manic 3 is scheduled for operatio 1976. Much of Quebec's load growth in the period 1972-76 will be met from the Churc Falls development under a long-term contract with Brinco. The nuclear plant at Gent will add 250,000 kwe. to the capability of the province in 1971.

Ontario.—The placing in service of the first two 500,000-kw. units at Lambton ther station gave that station the distinction of having the largest unit size in Canada; it is third largest thermal station in Canada after Lakeview and R. L. Hearn. By the e of 1970, the Lambton capacity will be doubled, making it second only to Lakeview. H ever, this is somewhat overshadowed by the announcement of future plans for thermal pl expansion in Ontario, which include four 800,000-kw. units at the Bruce nuclear stati four 500,000-kw. nuclear oil-fired units at Lennox near Kingston, and four additional c fired units at Nanticoke. These additions, when added to previously committed expansi of four 500,000-kw. units at Nanticoke and four 540,000-kwe. units at the Pickering nucl station, will provide total expansion plans after 1970 of 11,745,000 kw. in fossil- a nuclear-fuelled capacity. Modest hydro expansion continues with somewhat over 200,(kw. added in 1969 and scheduled for each of the years 1970 and 1971.

Transmission expansion in 1969 related primarily to the completion and strengthen of the 230-kv. interconnection between the eastern and western regions of the provin a total of 610 circuit miles of 230-kv. line was added.

Manitoba.—In 1969, a 105,000-kw. thermal unit was added at Brandon and t 12,000-kw. gas turbines were installed at the Selkirk station, increasing the provinc thermal capability by 129,000 kw. A sixth 33,000-kw. generator unit at Kelsey on Nelson River raised the capacity of this northern Manitoba hydro station to 202,500 k The AC transmission system was extended by 126 miles at 115 kv. and 106 miles at 66 Planned expansion includes 140 miles at 138 kv. and 165 miles at 230 kv.

Major expansion plans centre on the Nelson River development, the first units of Kettle plant being scheduled for 1971. Construction of the related 1,112 circuit miles ±450-kv. high-voltage direct-current transmission is scheduled for completion in Aug 1971; the associated converter terminal equipment will provide 810,000 kw. of transmiss capacity for the initial service date. Some uncertainty exists in connection with the lo term development of the Nelson River pending re-examination of various aspects of wa diversion and storage pertaining to the Churchill River, Southern Indian Lake and La Winnipeg.

Saskatchewan.—In 1969 the first of three 150,000-kw. coal-fired thermal units ned for Boundary Dam was completed. The transmission system was reinforced by addition of a 115-mile 230-kv. circuit and plans are under way to add 120 miles of kv. line and upgrade 115 miles of existing 138-kv. circuit to operation at 230 kv.

Alberta.—The major addition during 1969 was a 150,000-kw. thermal unit at the tle River plant of Canadian Utilities Limited. Plans include a 165,000-kw. unit in 1970 monton Power) and a second 300,000-kw. unit in 1971 at Sundance (Calgary Power). next significant hydro-electric addition will be two 54,000-kw. units at Bighorn on the th Saskatchewan River (Calgary Power), scheduled for 1972. Transmission additions he province in 1969 included 168 circuit miles at 144 kv.

British Columbia.—Two additional units rated at 227,000 kw. each were placed in rice in the Gordon M. Shrum station on the Peace River and 781 miles of transmission were added to the related 500-kv. AC transmission system. Construction of the Mica n under the Columbia River Treaty continued. Downstream power benefits were eived during the year as a result of the early completion of the Hugh Keenleyside row Lakes) Dam in October 1968. The completion of 21 miles of undersea cable circuit 26 miles of associated overhead line and the doubling of both voltage and current rating 260 kv. and 1,200 amps., respectively, raised the transmission capacity of the DC trans- sion system to Vancouver Island from 78,000 kw. to 312,000 kw.; this is a monopolar tem with ground return path.

Yukon Territory.—The first 138-kv. transmission line in the Yukon, a 250-mile gle-circuit woodpole line, was placed in service in 1969 to supply power from Whitehorse he Anvil Mining Corporation at Faro. An 8,000-kw. hydro-electric unit was added to Whitehorse plant to meet, in part, this additional mining load.

Northwest Territories.—Most generating plant changes in the Northwest Territories 969 involved re-allocation of diesel units to suit local needs. Substantial additions will e place in 1970 to a number of generating stations when over 20,000 kw. in diesel plant acity is to be added to the existing system total of 66,000 kw. installed.

ection 3.—Power Generating Capability and Load Requirements

Power generating *capability*, as covered in this Section, is the measurement of the ilable generating resources of all hydro and thermal facilities at the time of the one-hour n peak load for each reporting company, and is not equal to the *capacity* of such generat- facilities. For example, a hydro plant may have a capacity of 100,000 kw. but if, at the e of peak load, the water available for generation is only 80 p.c. of the plant capacity uirements, then its capability is 80,000 kw.

Total generating capability has grown at a rapid rate especially in the last few decades. e annual rate of increase was 6.4 p.c. in the ten-year period 1959-69 and 7.8 p.c. in the r-year period 1965-69. In comparison, the forecast rate of growth for the years 1969-74 .5 p.c.; thermal generating capability is expected to grow at an average rate of 11.9 p.c. ear in the forecast period compared with 13.9 p.c. in the period 1959-69, and hydro- ctric capability is expected to increase at 5.3 p.c. a year compared with 4.3 p.c. in the 59-69 period. This rate of growth in hydro generating capability in the forecast period attributable to the large power projects under construction in relatively remote areas t will be completed within the next few years.

Among the provinces, Quebec has the largest generating capability, followed by On- io, British Columbia and Alberta. Quebec also has the largest hydro-electric generating pability, followed by Ontario and British Columbia, but Ontario has the largest thermal pability followed by Alberta and British Columbia. The first full-scale nuclear power tion went into commercial operation in Ontario early in 1967.

The largest absolute growth in generating capability for the forecast years is indicat for Ontario at 6,377,000 kw., followed by Newfoundland at 3,680,000 kw.; Quebec 1,716,000 kw. and British Columbia at 1,633,000 kw. Ontario will meet most of its increas generating capability by adding 5,927,000 kw. in thermal capability and 450,000 kw. hydro capability, the former including 2,000,000 kw. nuclear. Newfoundland will a 3,373,000 kw. hydro and 307,000 kw. thermal and Quebec 1,486,000 kw. hydro a 230,000 kw. thermal.

Firm power peak load is the measure of the maximum average net kilowatt dema of one-hour duration from all loads, including commercial, residential, farm and industri consumers as well as the line losses. Such load demand increased at the rate of 7.0 p. a year from 1959 to 1969 and 7.3 p.c. a year from 1964 to 1969; peak-load demand is fo cast to increase at the average rate of 7.1 p.c. a year in the period 1969-74. As a resu of the rapid increase in generating capability and the somewhat slower but steady increa in the peak loads, together with the slight reduction in deliveries of firm power to the Unit States, the indicated reserve on net generating capability in the 1959-69 period increas each year except 1961, 1963, 1964 and 1966. The forecast is for increases from 1969 1974 with the exception of 1970. The reserve ratio as a percentage of firm power pe load reached a high of 28.2 p.c. in 1960 and fell to 11.6 p.c. in 1966 but is expected to increa to 18.8 p.c. in 1974.

3.—Net Generating Capability, by Province, 1969

(Thousand kilowatts)

Province or Territory	Type of Generating Facility				Total
	Hydro-Electric	Thermal-Electric			
		Steam[1]	Internal Combustion	Gas Turbine	
Newfoundland	810	30	23	29	89
Prince Edward Island	—	67	7	—	7
Nova Scotia	160	660	3	—	82
New Brunswick	570	636	4	—	1,21
Quebec	11,656	670	23	36	12,38
Ontario	6,329	4,898	8	350	11,58
Manitoba	1,205	291	23	24	1,54
Saskatchewan	581	642	34	88	1,34
Alberta	681	1,307	33	155	2,17
British Columbia	4,080	1,025	128	188	5,42
Yukon Territory	27	—	22	—	4
Northwest Territories	35	1	13	—	4
Canada	**26,134**	**10,227**	**321**	**870**	**37,55**

[1] Includes 208,000 kw. of nuclear capability in Ontario.

Section 4.—Electric Power Statistics

Electric power statistics presented in this Section are based on reports of all electric utilities and all industrial establishments that generate energy regardless of whether not any is sold and therefore show the total production and distribution of electric energ in Canada. Utilities are defined as companies, commissions, municipalities or individua whose primary function is to sell most of the electric energy that they have either generate or purchased. Industrial establishments are defined as companies or individuals tha generate electricity mainly for use in their own plants.

(Thousand kilowatts)

Item	Actual									Forecast				
	1951	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
Net Generating Capability—														
Hydro-electric	9,044	18,651	19,241	19,493	20,779	21,459	22,393	24,161	26,134	27,012	28,809	30,970	32,586	33,859
Steam—Conventional	1,032	4,596	5,194	5,422	6,354	6,634	7,798	8,877	10,019	12,294	12,856	13,713	15,058	16,212
Nuclear		—	—	—	—	—	167	200	208	208	708	1,208	1,958	2,458
Internal combustion		251	236	255	243	257	264	310	321	353	353	361	360	372
Gas turbine		371	382	384	460	583	748	875	870	902	934	950	1,007	1,021
Totals, Net Generating Capability	**10,076**	**23,869**	**25,053**	**25,554**	**27,836**	**28,933**	**31,370**	**34,423**	**37,552**	**40,769**	**43,660**	**47,202**	**50,969**	**53,922**
Receipts of firm power from United States	—	4	2	2	—	100	180	110	3	93	3	3	3	3
Deliveries of firm power to United States	175	121	122	127	89	87	95	105	111	305	414	357	333	292
Totals, Net Capability	**9,901**	**23,752**	**24,933**	**25,429**	**27,747**	**28,946**	**31,455**	**34,428**	**37,444**	**40,557**	**43,249**	**46,848**	**50,639**	**53,633**
Peak Loads—														
Firm power peak loads within Canada	8,989	18,972	20,755	22,503	24,167	25,921	27,812	30,151	32,022	35,371	37,530	40,291	42,657	45,093
Indicated shortages	321	—	28	13	—	—	—	149	70	—	—	—	—	—
Totals, Indicated Peak Loads within Canada	**9,310**	**18,972**	**20,783**	**22,516**	**24,167**	**25,921**	**27,812**	**30,300**	**32,092**	**35,371**	**37,530**	**40,291**	**42,657**	**45,093**
Indicated Reserve	**591**	**4,780**	**4,150**	**2,913**	**3,580**	**3,025**	**3,643**	**4,128**	**5,352**	**5,186**	**5,719**	**6,557**	**7,982**	**8,540**

The current series of electric power statistics dates back to 1956. Earlier report entitled *Central Electric Stations*, were concerned solely with the electrical utility industr and hence excluded statistics relating to power produced by industrial establishments f their own use, although power sold by such establishments was included. The late figures available at time of printing (February 1971) for Tables **6-10** were for 1968.

5.—Electric Energy Generated, by Type of Station, 1960-69, and by Province 1968 and 19

Year and Province or Territory	Generated by—		Total	Year and Province or Territory	Generated by—		Total
	Water Power	Thermal Power			Water Power	Thermal Power	
	'000 kwh.	'000 kwh.	'000 kwh.		'000 kwh.	'000 kwh.	'000 kwh.
1960r	105,882,773	8,574,421	114,457,194	1965	117,063,328	27,210,502	144,273,83
1961	103,919,241	9,794,077	113,713,318	1966	129,834,430	28,300,802	158,135,23
1962	104,050,724	13,418,024	117,468,748	1967	132,747,303	32,877,520	165,624,82
1963	103,831,866	18,406,328	122,238,194	1968	134,972,933	41,405,342	176,378,27
1964	113,343,948	21,642,799	134,986,747	1969p	147,922,000	42,171,000	190,093,00
1968				**1969p**			
Nfld.	3,683,552	130,726	3,814,278	Nfld.	3,975,000	138,000	4,113,00
P.E.I.	—	199,038	199,038	P.E.I.	—	218,000	218,00
N.S.	697,785	2,364,579	3,062,364	N.S.	634,000	2,476,000	3,110,00
N.B.	1,579,884	2,618,987	4,198,871	N.B.	2,527,000	2,160,000	4,687,00
Que.	61,626,689	3,503,567	65,130,256	Que.	65,125,000	3,769,000	68,894,00
Ont.	38,396,016	18,070,848	56,466,864	Ont.	40,089,000	20,604,000	60,693,00
Man.	6,464,732	313,496	6,778,228	Man.	7,279,000	78,000	7,357,00
Sask.	1,754,071	3,122,416	4,876,487	Sask.	3,123,000	2,376,000	5,499,00
Alta.	1,063,210	6,688,666	7,751,876	Alta.	1,376,000	7,407,000	8,783,00
B.C.	19,404,613	4,305,733	23,710,346	B.C.	23,447,000	2,877,000	26,324,00
Y.T.	105,679	30,927	136,606	Y.T.	347,000	68,000	415,00
N.W.T.	196,702	56,359	253,061	N.W.T.			
Canada, 1968.	**134,972,933**	**41,405,342**	**176,378,275**	**Canada, 1969.**	**147,922,000**	**42,171,000**	**190,093,00**

Of the total generation in 1969 of 190,093,000,000 kwh., 77.8 p.c. was produced fron water power and 22.2 p.c. was generated thermally; the proportions differed markedl among provinces as shown in the following statement.

Province	*Hydro*	*Thermal*
	p.c.	p.c.
Newfoundland	96.6	3.4
Prince Edward Island	—	100.0
Nova Scotia	20.4	79.6
New Brunswick	53.9	46.1
Quebec	94.5	5.5
Ontario	66.1	33.9

Province or Territory	*Hydro*	*Therm*
	p.c.	p.c.
Manitoba	98.9	1.1
Saskatchewan	56.8	43.2
Alberta	15.7	84.3
British Columbia	89.1	10.9
Yukon and Northwest Territories	83.6	16.4

Table 6 gives summary figures of power production and distribution classified by ince, and Tables 7 and 8 give figures classified by type of production establishment. l installed capacity in Canada amounted to 35,908,497 kw. in 1968, an increase of 3,130 kw. over 1967. Of the 1968 total, 30,599,012 kw. were accounted for by utilities the remainder by industrial establishments. During 1967 and 1968, total sales to nate customers amounted to 107,762,063,000 kwh. and 116,795,097,000 kwh., respecy, of which 99.8 p.c. in both years was sold by utilities.

Sales to power customers excluding sales to industrial establishments with generating ties made up 50.5 p.c. of the total in 1967 and 49.7 p.c. in 1968, sales to domestic farm customers were 32.5 p.c. and 32.3 p.c., respectively, and commercial sales 15.9 and 16.8 p.c., respectively. Exports to the United States in 1968 amounted to 8,314,000 kwh., slightly less than in 1967.

6.—Summary Electric Power Statistics, by Province, 1967 and 1968

Year and vince or Territory	Installed Generating Capacity	Energy Made Available in Canada	Exported to U.S.A.	Ultimate Customers[1]	Total Revenue from Ultimate Customers[2]	Electrical Utilities	
						Employees	Salaries and Wages
	kw.	'000 kwh.	'000 kwh.	No.	$'000	No.	$'000
1967							
foundland	789,416	3,122,314	—	99,736	21,796	945	5,555
ce Edward Island	57,391	181,611	—	28,332	4,786	190	1,070
a Scotia	695,021	2,886,659	—	229,239	43,018	1,917	10,555
Brunswick	813,221	3,427,318	333,689	177,352	37,512	1,516	8,363
ec	11,604,761	58,790,198	25,578	1,749,177	339,526	12,318	95,582
rio	10,249,529	56,834,648	3,101,718[3]	2,314,229	454,251	17,399	125,871
toba	1,429,279	6,751,879	—	313,603	57,389	2,434	15,982
atchewan	1,078,197	3,969,392	—	306,790	61,715	1,648	11,653
rta	2,050,870	6,798,682	—	439,637	84,989	2,074	14,462
sh Columbia	4,105,775	22,717,696	532,903[4]	662,172	136,799	3,111	23,512
n Territory	33,360	117,044	—	3,233	2,236	84	509
hwest Territories	58,547	214,543	—	4,426	4,167	230	1,784
Canada, 1967	**32,965,367**	**165,811,984**	**3,993,888**	**6,327,926**	**1,248,184**	**43,866**	**314,898**
1968							
foundland	935,663	3,733,187	—	108,579	24,639	991	5,108
ce Edward Island	77,391	199,038	—	28,961	5,188	197	1,146
a Scotia	706,441	3,176,610	—	233,104	45,963	1,787	10,977
Brunswick	1,101,534	3,720,654	388,390	176,988	39,445	1,219	9,197
ec	11,800,815	60,551,341	36,595	1,815,202	392,834	12,334	108,508
rio	11,316,466	61,144,823	2,529,276[5]	2,359,587	498,057	17,616	139,124
toba	1,552,154	7,282,093	1	317,777	64,148	2,412	17,221
atchewan	1,253,067	4,400,804	—	317,129	67,371	1,634	12,606
rta	2,049,934	7,753,151	—	459,687	93,235	2,205	15,984
sh Columbia	5,000,965	24,489,832	1,034,052[6]	686,165	148,379	3,146	25,827
n Territory	50,320	136,606	—	3,617	2,637	89	600
hwest Territories	63,747	253,061	—	5,615	4,144	234	1,918
Canada, 1968	**35,908,497**	**176,841,200**	**3,988,314**	**6,512,411**	**1,386,010**	**43,861**	**348,216**

[1] Excludes industrial establishments that purchase power and have generating facilities. [2] Excludes revefrom sales to industrial establishments that purchase power and have generating facilities, totalling $79,328,000 7 and $86,527,000 in 1968. [3] Includes 2,109,553,000 kwh. "no value" energy. [4] "No value" energy. ludes 1,640,947,000 kwh. "no value" energy. [5] Includes 1,034,021,000 kwh. "no value" energy.

7.—Summary Electric Power Statistics, by Type of Establishment, 1967 and 1968

Year and Item		Electrical Utilities			Industrial Establishments	Total
		Publicly Operated	Privately Operated	Total		
1967						
Installed generating capacity	kw.	23,961,801	3,758,953	27,720,754	5,244,613	32,965
Energy generated	'000 kwh.	116,818,569	16,482,399	133,300,968	32,323,855	165,624
Hydro	"	*92,677,039*	*12,025,515*	*104,702,554*	*28,044,749*	*132,747*
Thermal	"	*24,141,530*	*4,456,884*	*28,598,414*	*4,279,106*	*32,877*
Energy Made Available in Canada	**'000 kwh.**	..	..	..	..	**165,811**
Disposal of energy in Canada[1]	'000 kwh.	110,093,288	11,900,143	121,993,431	43,818,553	165,811
Energy exported to United States	"	3,028,964	701,306	3,730,270	263,618	3,993
Ultimate customers in Canada	No.	5,778,714	542,628	6,321,342	6,584	6,327
Domestic and farm	"	*5,122,855*	*461,633*	*5,584,488*	*6,188*	*5,590*
Commercial	"	*569,449*	*68,690*	*638,139*	*365*	*638*
Power	"	*78,655*	*11,355*	*90,010*	*17*	*90*
Street lighting	"	*7,755*	*950*	*8,705*	*14*	*8*
Revenue from ultimate customers[2]	$'000	1,113,496	132,622	1,246,118	2,066	1,248
Revenue from exports to United States	"	2,570	3,501	6,071	1,660	7
Employees	No.	39,200	4,666	43,866	..	..
Salaries and wages	$'000	285,470	29,428	314,898	..	..
1968						
Installed generating capacity	kw.	26,753,224	3,845,788	30,599,012	5,309,485	35,908
Energy generated	'000 kwh.	126,074,433	17,808,952	143,883,385	32,494,890	176,378
Hydro	"	*95,034,936*	*12,277,892*	*107,312,328*	*27,660,105*	*134,972*
Thermal	"	*31,039,497*	*5,531,060*	*36,570,557*	*4,834,785*	*41,405*
Energy Made Available in Canada	**'000 kwh.**	..	..	..	..	**176,841**
Disposal of energy in Canada[1]	'000 kwh.	120,217,619	11,522,820	131,740,439	45,100,761	176,841
Energy exported to United States	"	3,047,937	605,214	3,653,151	335,163	3,988
Ultimate customers in Canada	No.	5,966,145	539,923	6,506,068	6,343	6,512
Domestic and farm	"	*5,284,647*	*458,684*	*5,743,331*	*5,903*	*5,749*
Commercial	"	*595,071*	*69,753*	*664,824*	*413*	*665*
Power	"	*77,995*	*10,525*	*88,520*	*15*	*88*
Street lighting	"	*8,432*	*961*	*9,393*	*12*	*9*
Revenue from ultimate customers[2]	$'000	1,251,417	132,717	1,384,134	1,906	1,386
Revenue from exports to United States	"	2,788	3,095	5,883	1,834	7
Employees	No.	39,606	4,258	43,864	..	.
Salaries and wages	$'000	319,985	28,231	348,216	..	.

[1] Excludes sales by electrical utilities to industrial establishments with generating facilities, sales by indust establishments with generating facilities to electrical utilities, and inter-industrial sales. [2] Excludes reve from sales by electrical utilities to industrial establishments with generating facilities, and inter-industrial sales

8.—Electric Power Generated classified by Type of Establishment, by Province, 1967 and 1968

Year and Province or Territory	Electrical Utilities		Industrial Establishments	Total
	Publicly Operated	Privately Operated		
	'000 kwh.	'000 kwh.	'000 kwh.	'000 kwh.
1967				
ndland	490,012	2,167,961	547,735	3,205,708
Edward Island	6,684	174,927	—	181,611
Scotia	1,318,202	1,347,130	294,269	2,959,601
runswick	2,907,702	137,198	589,841	3,634,741	
	41,326,422	5,711,822	16,845,794	63,884,038
	47,557,645	1,588,270	2,960,644	52,106,559
ba	6,498,918	—	65,876	6,564,794
chewan	3,516,507	634,927	211,196	4,362,630
a	1,893,323	4,390,410	515,295	6,799,028
Columbia	11,035,446	305,921	10,253,159	21,594,526
Territory	92,366	16,852	7,826	117,044
vest Territories	175,342	6,981	32,220	214,543
Canada, 1967	**116,818,569**	**16,482,399**	**32,323,855**	**165,624,823**
1968				
ndland	790,826	2,630,056	393,396	3,814,278
Edward Island	7,095	191,943	—	199,038
Scotia	1,357,479	1,309,586	395,299	3,062,364
runswick	3,522,490	82,780	593,601	4,198,871
	43,184,200	5,932,798	16,013,258	65,130,256
	51,970,491	1,467,043	3,029,330	56,466,864
ba	6,705,540	—	72,688	6,778,228
chewan	3,975,451	684,252	216,784	4,876,487
a	1,960,519	5,158,635	632,722	7,751,876
Columbia	12,297,753	325,796	11,086,797	23,710,346
Territory	99,153	17,877	19,576	136,606
vest Territories	203,436	8,186	41,439	253,061
Canada, 1968	**126,074,433**	**17,808,952**	**32,494,890**	**176,378,275**

verage domestic and farm consumption rose from 6,261 kwh. in 1967 to 6,571 kwh. 68. Among the provinces, the averages in 1968 varied from a low of 3,305 kwh. in e Edward Island to a high of 8,062 kwh. in Manitoba. For domestic and farm cus- s the average annual bill was $97.52 in 1968 as against $90.71 in 1967.

lthough many utilities do not keep records on farm customers separate from other stic customers, the data reported on farm service indicate that the average consump- ose from 8,548 kwh. per customer in 1967 to 9,155 kwh. in 1968 and the average bill $145.08 to $156.26.

omestic and Farm Service by Electrical Utilities and Industrial Establishments, 1964-68

Item		1964	1965	1966	1967	1968
ers	No.	5,139,545	5,282,471	5,433,400	5,590,676	5,749,234
tt-hours sold	'000	27,277,574	29,737,741	32,131,003	35,005,414	37,779,593
ue received	$'000	401,194	424,924	453,534	507,131	560,671
tt-hours per customer	No.	5,307	5,630	5,914	6,261	6,571
e annual bill	$	78.06	80.44	83.47	90.71	97.52
ue per kwh.	cts.	1.47	1.43	1.41	1.45	1.48

In 1968, natural gas accounted for 17.3 p.c. of thermal generation by utilities, for 61.4 p.c., petroleum fuels for 19.0 p.c. and nuclear fuel for 2.3 p.c.; correspon proportions in 1967 were 18.9 p.c., 65.1 p.c., 15.5 p.c., and 0.5 p.c., respectively.

10.—Fuel Used by Electrical Utilities to Generate Power, by Province, 1967 and 1968

Year and Province or Territory	Coal		Petroleum Fuels		Gas	
	Quantity	Value	Quantity	Value	Quantity	Val
	tons	$	Imp. gal.	$	Mcf.	$
1967						
Newfoundland	—	—	13,795,864	1,515,074	—	—
Prince Edward Island	—	—	14,894,523	989,850	—	—
Nova Scotia	834,545	7,633,539	31,102,194	2,065,540	—	—
New Brunswick	303,387	2,501,697	78,003,885	4,774,353	—	—
Quebec	—	—	70,488,766	5,744,641	—	—
Ontario	4,889,554	43,591,743	8,678,440	1,283,608	321,949	13
Manitoba	41,673	170,234	5,672,923	903,479	65,160	2
Saskatchewan	1,470,975	3,367,513	15,057,540	772,418	13,835,603	2,66
Alberta	1,573,239	1,910,883	5,719,615	542,586	34,838,683	5,83
British Columbia	—	—	50,095,929	4,608,451	18,491,919	5,02
Yukon Territory	—	—	753,078	199,377	—	—
Northwest Territories	—	—	3,851,263	851,928	—	—
Canada, 1967	**9,113,373**	**59,175,609**	**298,114,020**	**24,251,305**	**67,553,314**	**13,68**
1968						
Newfoundland	—	—	9,480,103	1,238,512	—	—
Prince Edward Island	—	—	16,590,592	1,102,661	—	—
Nova Scotia	712,358	6,250,117	54,180,591	3,424,000	—	—
New Brunswick	263,964	2,232,268	95,561,403	5,739,482	—	—
Quebec	—	—	177,772,229	12,095,472	—	—
Ontario	6,088,264	53,742,611	14,768,182	2,093,703	244,438	8
Manitoba	197,046	854,944	4,209,347	764,958	1,103,285	27
Saskatchewan	1,491,716	2,644,953	8,882,629	483,973	21,910,885	4,23
Alberta	2,345,452	2,747,477	8,473,646	570,661	34,221,570	6,07
British Columbia	—	—	40,560,022	3,550,484	22,256,508	4,90
Yukon Territory	—	—	924,816	257,414	—	—
Northwest Territories	—	—	2,908,793	716,484	—	—
Canada, 1968	**11,098,800**	**68,472,370**	**434,312,353**	**32,037,804**	**79,736,686**	**15,588**

Section 5.—Electrical Utility Ownership and Regulation

Federal Government regulation of electrical utilities with respect to the expor electric power and the construction of lines over which such power is exported falls wi the jurisdiction of the National Energy Board (see Index).

Power is generated in Canada by publicly and privately operated utilities and industrial establishments. Table 8, p. 759, giving statistics by type of establishment sh that over 70 p.c. of the total electric power generated in 1968 was produced by pub operated utilities, 10 p.c. by privately operated utilities and 18 p.c. by industrial estab ments. However, ownership differs greatly in different areas of the country. Qu output at one time was predominantly from privately owned plants but since 1963 has l almost entirely publicly owned. In Ontario almost all electric power has been produ by a publicly owned utility for over 60 years.

Because the determination of market prices and regulation of services is limited to -fuel competition with oil, gas and coal, some regulation of electrical utilities has been mpted in all provinces. In most of them the generation and main transmission of er is the responsibility of a provincial Crown corporation. Investor-owned electrical ties are predominant in Alberta and play a significant role in Nova Scotia, Newfound- Prince Edward Island, Ontario and British Columbia; they contribute about 10 p.c. e total power generated. Generating facilities in industrial establishments represented p.c. of installed capacity at the end of 1969 and generated 17.6 p.c. of the electric gy produced during the year. There is an annual decline in industrial generation as ecomes increasingly attractive to purchase power from utilities which can take fuller ntage of larger unit sizes and operational flexibility. Even when process steam is ired for an industrial operation, there are instances when it is advantageous to purchase steam and power from the electrical utility; supply of steam to the Point Tupper y water plant from the Nova Scotia Power Commission Point Tupper thermal station, missioned in 1969, is an example.

Newfoundland.—The Newfoundland and Labrador Power Commission was estab- d by the provincial government in 1954 for the purpose of supplying power wherever ed throughout the province. The Commission began large-scale production of electric gy in 1967 when the Baie d'Espoir plant began operating and the provincial transmis- grid was established. Prior to this, electricity was provided to isolated areas through Rural Electricity Authority and Power Distribution Districts. The Newfoundland t and Power Company is an investor-owned company serving the city of St. John's and rtion of the province beyond this urban area. In Labrador, the Churchill Falls (Lab- r) Corporation, a subsidiary of Brinco, is engaged in the development of the massive rchill Falls power project which will commence production in 1972. This company controls the Twin Falls Power Corporation which operates a substantial generating t in the vicinity of Churchill Falls on the Unknown River and serves iron ore mining res in western Labrador.

Prince Edward Island.—The Maritime Electric Company provides service to cus- ers in Charlottetown and in most of the towns, villages and rural areas in the province. Company, having total assets of $29,608,082, supplied 21,893,000 kwh. in 1969, an ease of 9.9 p.c. over 1968, and had an installed capacity of 70,500 kw. The town of merside is supplied by a municipal electric department with an installed generating city of 6,900 kw. It is interconnected with the Maritime Electric Company System.

Nova Scotia.—With total fixed assets of $197,473,826, the self-supporting Nova Scotia er Commission is one of the largest businesses in the province. The Commission was ted under the Power Commission Act of 1919 to exploit the limited but useful hydro ntial of the province, as investigated by the Water Power Commission of 1915. The objective was to develop remote sites to supply power and energy at lowest possible to new industry, particularly pulp and paper operations, and a few centres of popula- . The 1937 Rural Electrification Act, however, provided equalization grants and made ossible to carry out the formidable task of bringing power and energy to low-density n and rural village areas. More than 6,500 miles of transmission and distribution lines luct the energy generated by about 533,000-kw. capability in 26 stations to and from y corner of Nova Scotia. Hydro power constitutes only a fraction of base load, although put to optimum use for peaking purposes, thermal power having risen greatly in im- ance during the past decade.

11.—Capacity and Output of the Nova Scotia Power Commission, Year Ended Mar. 31, 1

System[1] and First Year of Operation	Present Installed Capacity	Output[2]
	kw.	kwh.
Western Zone—		
Harmony (1943)	600	4,722,5
Roseway (1930)	888	3,657,0
Gulch (1952)	6,000	29,867,0
Ridge (1957)	4,000	13,400,7
Sissiboo (1960)	6,000	34,632,0
Weymouth (1961)	18,000	51,586,0
St. Margaret (1921)	10,400	35,642,0
Tusket (1929)	2,160	16,955,5
Mersey—		
Upper Lake Falls (1928)	5,400	
Lower Lake Falls (1928)	7,380	133,057,0
Big Falls (1928)	9,000	
Cowie Falls (1938)	7,200	47,526,0
Deep Brook (1950)	9,000	54,022,0
Lower Great Brook (1955)	4,500	21,815,0
Eastern Zone—		
Malay Falls (1924)	3,600	16,133,6
Ruth Falls (1925)	6,970	45,588,0
Liscomb (1957)	450	3,070,8
Trenton (thermal) (1951)	210,000	525,848,4
Canseau Zone—		
Point Tupper (thermal) (1969)	80,500	84,3
Barrie Brook (1940)	360	2,089,6
Dickie Brook (1948)	3,800	12,393,2
Cumberland Zone—		
Maccan (thermal) (1927)	26,850	80,732,0
Eastern Light and Power—		
Seaboard (thermal) (1930)	110,000	806,508,0
Totals	**533,058**	**1,939,330,6**

[1] Hydro unless otherwise noted. [2] For 16-month fiscal period.

The Nova Scotia Light and Power Company is the second major generating utility the province and supplies an area that includes the Halifax–Dartmouth area and extens regions in central Nova Scotia. The peak load in 1968 was 284,770 kw. and total ass were $132,128,674. The company has nearly 1,200 employees and serves over 120,0 customers; it sold 1,275,153,000 kwh. in 1968. With the Nova Scotia Power Commissi the company forms part of the Maritime Power Pool, which includes New Brunswick a Nova Scotia. A number of municipal commissions provide power distribution wit their municipalities.

New Brunswick.—The New Brunswick Electric Power Commission was incorporat under the Electric Act, 1920. Generating stations owned by the Commission at Mar. 1969 were as follows:—

Plant	*Type*	*Capacity*	*Plant*	*Type*	*Capacity*
		kw.			kw.
Grand Falls	Hydro	60,500	Grand Lake	Steam	98,750
Musquash	Hydro	7,500	Saint John (Dock St.)	Steam	16,785
Tobique	Hydro	20,000	Chatham	Steam	36,155
Beechwood	Hydro	115,000	Grand Manan	Diesel	2,365
Milltown	Hydro	3,200	Mactaquac	Hydro	300,000
Sisson	Hydro	9,500			
Courtenay Bay	Steam	269,300	Total Capacity		939,055

All the foregoing generating units with the exception of Grand Manan are interected in a province-wide grid system. The statistical information given in Table 12 vs the growth of the Commission's undertakings since 1965.

12.—Growth of the New Brunswick Electric Power Commission, Years Ended Mar. 31, 1965-69

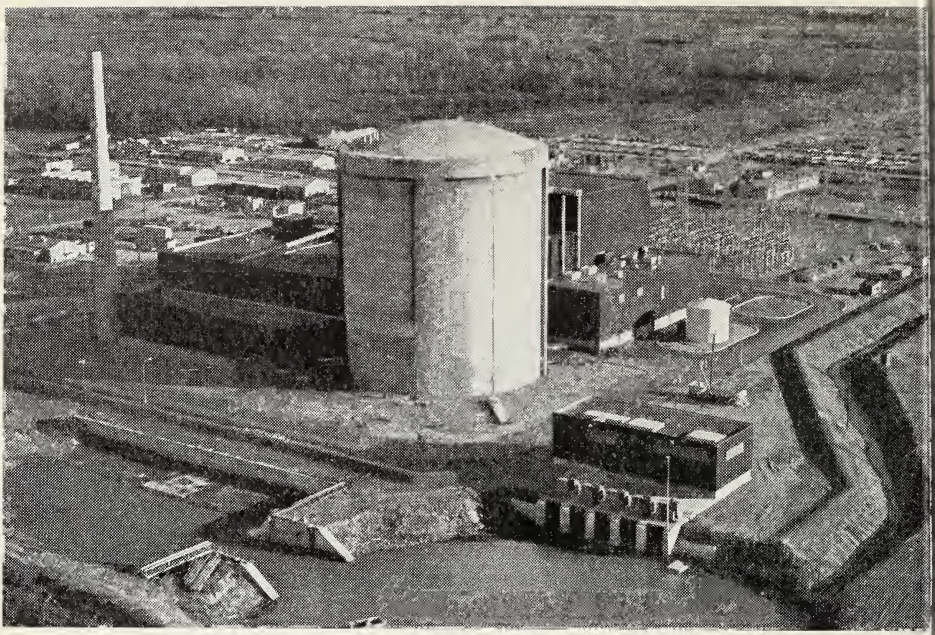
Item	1965	1966	1967	1968	1969
-voltage transmission line... miles	2,093	2,255	2,315	2,495	2,540
ribution line..... "	8,528	8,586	8,664	8,671	8,765
ct customers..... No.	121,036	124,030	124,753	128,457	140,187
t capacities..... kw.	419,761	430,261	540,961	884,563	939,055
r generated (incl. purchases) kwh.	2,207,165,360	2,571,484,730	3,013,532,860	3,356,151,990	3,856,535,510
tal invested..... $	205,192,238	247,896,370	291,563,329	343,927,953	372,547,866
enue..... $	29,244,088	33,108,342	37,601,262	40,565,894	45,023,257

The provincial electric power system is interconnected with an extensive high-voltage smission system and, with the utilities in Nova Scotia, forms part of the Maritime Power l. At the end of 1969, plans were under way for important interconnections with Hydro bec and with utilities in the New England States. These interconnections will provide roved opportunities to meet the growing load requirements in the most economic ion, not only in New Brunswick but throughout the Maritime Power Pool.

Quebec.—*Stream and Reservoir Control.*—The Quebec Streams Commission was ated in 1910 (SQ 1910, c. 5) and given additional powers in 1912 (RSQ 1925, c. 46) and 0 (SQ 1930, c. 34); it was authorized to ascertain the water resources of the province, to ke recommendations regarding their control and to construct and operate certain storage ns to regulate the flow of streams. In 1955, the Commission was abolished and its vers and attributions transferred to the Hydraulic Resources Department, now the partment of Natural Resources. The rivers controlled by the Commission at the time ransfer, either by means of dams on the rivers or by regulating the outflow of lakes at headwaters, were: the St. Maurice, the Gatineau, the Lièvre, the St. Francis, the coutimi, the Au Sable and the Métis. The Commission also operated nine reservoirs the North River, two in the watershed of the Ste. Anne de Beaupré River and one at the let of Lake Morin on Rivière du Loup (lower). In 1965, eleven auxiliary reservoirs on St. Maurice System and two on the Gatineau were turned over by the Department of tural Resources to the Quebec Hydro-Electric Commission for operation and maintenance.

Storage reservoirs otherwise controlled or operated are: the Lake St. John, the Lake nouane and Passe Dangereuse on the Peribonca River controlled by the Aluminum mpany of Canada; the Onatchiway on the Shipshaw River controlled by Price Brothers Company Limited; Memphremagog Lake on the Magog River controlled by the minion Textile Company; and Témiscamingue and Quinze Lakes on the Ottawa River trolled by the federal Department of Public Works. Storage reservoirs under the trol of the Quebec Hydro-Electric Commission are: Témiscouata Lake on the Madaska River, Kipawa Lake on the Ottawa River, Lac Dozois on the upper Ottawa River, Cassé in the Bersimis River watershed and Lac Ste. Anne on the Toulnustouc River, ributary of the Manicouagan River.

The Quebec Hydro-Electric Commission.—The Quebec Hydro-Electric Commission was ablished in 1944 (SQ 1944, c. 22) for the purpose of supplying power to the municipalities, ndustrial and commercial undertakings and to citizens of the Province of Quebec at the est rates consistent with sound financial administration. On May 1, 1963, the Comsion acquired control of the following privately owned electrical utilities operating in Province of Quebec: the Shawinigan Water and Power Company, the St. Maurice wer Corporation, the Quebec Power Company, the Southern Canada Power Company, Gatineau Power Company, the Northern Quebec Power Company, the Saguenay



Hydro-Quebec's new Institute of Research, located on the outskirts of Montreal, will soon be the most comprehensive electrical research and testing centre in North America. The General Laboratories building (above) was opened in 1970, the High Voltage Laboratory will be completed in 1971 and the High Power Laboratory in 1972.

Electric Company, and the Lower St. Lawrence Power Company. As a result of th transactions, all electricity production, except for facilities operated by certain industr organizations in their own manufacturing operations, was brought under the control of single authority. The services of the Commission now cover virtually the entire provin except for local distribution of small amounts of electricity by some municipalities, m of which is purchased from the Commission or its subsidiaries.

At the end of 1969, Hydro-Quebec and its subsidiaries had in operation 53 hydro-elect stations having a capacity of 9,152,891 kw., and 16 thermal-electric stations having capacity of 656,030 kw.—a total capacity in operation of 9,808,921 kw. These faciliti permit the balanced distribution of power throughout Quebec and the most efficient u of the water power resources of the province. Power plant construction under way Quebec during 1969 is outlined at p. 752.

13.—Summary Statistics of the Operations of the Quebec Hydro-Electric Commission, 1967-69

Item		1967	1968	1969
Installed capacity	kw.	8,178,989	8,364,673	9,808,92
Hydro	"	*7,678,721*	*7,709,771*	*9,152,89*
Thermal	"	*500,268*	*654,902*	*656,03*
Consolidated system peak load	"	7,542,000	8,193,000	8,594,00
Available energy	'000,000 kw.	45,778	47,728	51,07
Total electricity sales	$	353,508,344	386,942,000	416,012,00
Customers, at Dec. 31	No.	1,646,302	1,707,773	1,761,05
Revenue	$	365,703,000	397,828,000	431,108,00
Operating expenditures, incl. power purchases	$	210,454,000	234,638,000	254,563,00
Capital expenditures	$	291,251,392	268,922,000	244,846,00
Properties and plant at cost	$	3,527,376,943	3,782,646,000	4,012,801,00
Employees, at Dec. 31, excl. construction personnel	No.	11,637	11,723	11,89
Salaries and wages paid, excl. construction	$	91,606,000	104,320,000	109,166,00

Ontario.—The Hydro-Electric Power Commission of Ontario is a corporate entity, lf-sustaining public enterprise endowed with broad powers with respect to the supply lectricity throughout the Province of Ontario. Its authority is derived from an Act he Provincial Legislature passed in 1906 to give effect to recommendations of earlier isory commissions that the water powers of Ontario should be conserved and developed the benefit of the people of the province. It now operates under the Power Com- sion Act (SO 1907, c. 19) passed in 1907 as an amplification of the Act of 1906 and sequently modified from time to time (RSO 1960, c. 300, as amended). The Com- sion may have from three to six members, all of whom are appointed by the Lieutenant- vernor in Council. Two commissioners may be members of the Executive Council of Province of Ontario.

The basic principle governing the financial operations of the Commission and its ciated municipal utilities is that electrical service is provided at cost. The Com- sion interprets cost as including payments for power purchased, charges for operating maintaining the power supply facilities, and related fixed charges. The fixed charges resent interest on debt, provisions for depreciation, allocations to reserves for con- gencies and rate stabilization, and the further provision of a sinking fund reserve for ring the Commission's capital debt. While the enterprise from its inception has been -sustaining, the province guarantees the payment of principal and interest on all bonds ed by the Commission and held by the public. In addition, the province has materially sted the development of agriculture by contributing under the Hydro-Electric Dis- ution Act toward the capital cost of extending rural distribution facilities.

Beginning in 1962, the entire provincial area served has been regarded for financial and inistrative purposes as a unit, but for several years thereafter there was still no electrical nection between the Commission's facilities in northwestern Ontario and those serving tomers in the remainder of the province. By early 1969, facilities for some interchange e available. They were used in that year, but interconnection entirely over Commission- ned facilities was not completed until the spring of 1970. Statistics are, therefore, pre- ted for the two operating systems, known as the East System and the West System. y, respectively, serve the areas east and west of a line extending north from Lake erior to the Albany River, a line that conforms roughly with the boundary dividing nder Bay District from the Districts of Algoma and Cochrane.

In addition to administering the enterprise over which it has direct control, the Com- sion, under the Power Commission Act and the Public Utilities Act, exercises certain latory functions, particularly with respect to the group of municipal electrical utilities it serves. In order to provide convenient and expeditious service in this dual func- of regulation and supply, the Commission subdivides its province-wide operations seven regions with regional offices located in seven major municipalities.

The Commission is concerned primarily with the provision of electric power by genera- or purchase and its delivery to the electrical utilities for resale in municipalities having contracts with the Commission. The Commission also supplies power in bulk, although under cost contract, to direct customers, including industrial customers whose require- ts are so large or so unusual as to make service by the local municipal utilities impractic- , mines, industries in unorganized territories, and certain interconnected systems.

In addition to these operations, which represent about 90 p.c. of its energy sales, the mmission delivers electric power to retail customers in rural areas and in a small group 28 municipalities served by Commission-owned local distribution facilities. Retail ice throughout the province is provided for the most part, however, by the municipal trical utilities, which supply ultimate customers in most cities and towns, in many ages, and in certain populous township areas. The municipal electrical utilities are ed and operated by local commissions.

During 1969, the Commission's investment in fixed assets at cost increased by),384,755 and at the end of the year amounted to $4,098,351,192. Assets, after deduct- accumulated depreciation, were $4,128,643,797. In that year, 354 municipal electrical

utilities engaged in the retail distribution of electricity purchased power from the Co mission. The assets of these utilities, after deducting accumulated depreciation, amount to $1,211,548,610, of which $492,190,861 represented the equity acquired in the Comm sion's systems by the municipal utilities operating under cost contracts.

14.—Power Developments of The Hydro-Electric Power Commission of Ontario, Under Construction or Approved as at Dec. 31, 1969

Development and Location	Units	In-Service Dates	Total Installed Capacity
	No.		kw.
Fossil-fuelled Thermal-Electric—			
Lambton–St. Clair River, south of Sarnia (coal)	4	1969–70	2,000,000
Nanticoke–Lake Erie, near Port Dover (coal)	4	1971–74	2,000,000
Lennox–Lake Ontario, near Kingston (oil)	4	1974–77	2,295,000
Nuclear-fuelled Thermal-Electric—			
Pickering–Lake Ontario, east of Toronto	4	1971–73	2,160,000
Bruce–Lake Huron, near Kincardine	4	1975–78	3,200,000
Combustion-Turbine—			
Pickering	6	1971–73	45,000
Bruce	—	1975	45,000
Hydro-Electric—			
Wells–Mississagi River	2	1970	203,300
Lower Notch–Montreal River	2	1971	228,000

[1] Tentative.

15.—Resources of The Hydro-Electric Power Commission of Ontario Generated and Purchased (All Systems), December 1968 and 1969

Year and System	Hydro-Electric Stations[1]	Thermal-Electric Stations[1]	Power Purchased
	kw.	kw.	kw.
December 1968—			
East System	4,931,000	3,974,000	723,600
West System	580,500	129,000	—
Totals	**5,511,500**	**4,103,000**	**723,600**
December 1969—			
East System	5,173,000	4,628,000	731,300
West System	580,500	129,000	—
Totals	**5,753,500**	**4,757,000**	**731,300**

[1] Dependable peak capacity—the amount of power which resources can be expected to supply at the time the system primary peak requirements, assuming that all units are available and that the supply of water is norma This capacity will vary from time to time in accordance with changing conditions. The capacity of a source purchased power is based on the terms of the purchase contract.

16.—Distribution of Power to Systems of The Hydro-Electric Power Commission of Ontario, Years Ended Dec. 31, 1965-69

NOTE.—Peak load generated and purchased, primary and secondary, in terms of generation.

System	1965	1966	1967	1968	1969
	kw.	kw.	kw.	kw.	kw.
East System	7,765,107	8,259,355	8,830,375	9,523,836	10,422,271
West System	583,300	580,100	598,700	614,750	635,050
Totals	**8,348,407**	**8,839,455**	**9,429,075**	**10,138,586**	**11,057,321**

17.—Growth of The Hydro-Electric Power Commission of Ontario, 1960-69

Year	Ultimate Customers Served Directly or Indirectly	Total Power Distributed[1]	Assets of Commission and Municipal Utilities
	No.	kw.	$
.....	1,881,472	6,157,534	3,044,800,819
.....	1,938,897	6,463,932	3,196,429,522
.....	1,991,289	6,968,885	3,148,330,722
.....	2,041,732	7,300,296	3,225,289,707
.....	2,095,754	7,688,790	3,331,568,632
.....	2,142,281	8,348,407	3,533,238,103
.....	2,187,767	8,839,455	3,777,633,871
.....	2,245,715	9,429,075	4,071,817,215
.....	2,292,015	10,138,586	4,424,172,463
.....	2,343,807	11,057,321	4,848,001,546

[1]Sum of the maximum 20-minute coincident peak loads (primary plus secondary) of each of the systems operated e Commission, given in terms of net output of the sources of supply to each system for the last month of each year.

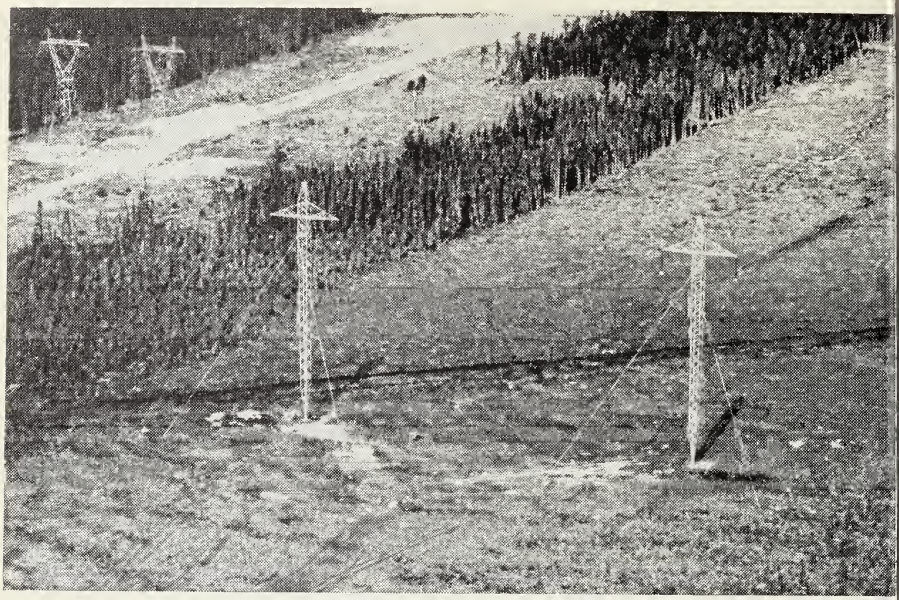
In addition to the Ontario Hydro province-wide system, a few investor-owned utilities ide service to customers in Cornwall, Fort Erie, Gananoque and Sault Ste Marie.

Manitoba.—Manitoba Hydro is the primary developing, generating and distributing r agency in the Province of Manitoba. The corporation came into being Apr. 1, 1961, wing amalgamation of the two former provincial government utilities engaged in the ation and distribution of electric power.

Manitoba Hydro operates six hydro-electric generating stations, two thermal-electric rating stations and 26 small diesel-electric generating plants. The combined generating bility is 1,501,418 kw., hydro installations accounting for 1,084,000 kw., thermal instal-ns for 394,000 kw. and diesel installations for 23,418 kw. Four hydro stations are ed on the Winnipeg River near Winnipeg, one is on the Saskatchewan River, 285 north of Winnipeg, and one is on the Nelson River, 450 miles northeast of Winnipeg. ix hydro stations and the thermal generating stations at Selkirk and Brandon are rically interconnected to a common network known as the Manitoba Integrated em. Diesel installations are used to provide power to isolated northern communities e extension of hydro-electric transmission facilities are not feasible.

Manitoba Hydro serves over 600 communities and 236,913 consumers in rural Manitoba suburban Winnipeg through a network of 37,012 miles of transmission and farm dis-tion lines. The Winnipeg Hydro Electric System distributes power within the cor-te limits of the city of Winnipeg. A portion of this power is generated by the city m from its own hydro and thermal plants and the remainder is purchased from itoba Hydro.

Saskatchewan.—The Saskatchewan Power Corporation was established in 1949 by Power Corporation Act (RSS 1965, c. 40, as amended). It succeeded the Saskatchewan r Commission which had been in operation since 1929. The original functions of the oration included the generation, transmission, distribution, sale and supply of electric y. The objective was to make electricity available to all the people of the province,



High voltage direct current is a very significant technique for moving large amounts of electric energy over great distances, and Manitoba's Nelson River Power project is an example of Canada's expertise in DC power generation and transmission. In the foreground are the transmission towers carrying power from the Nelson River at 900,000 volts DC while those in the background carry power from Grand Rapids at 230,000 volts AC.

in abundance and at reasonable rates. Since 1952, the Corporation has been authoriz to produce or purchase and to transmit, distribute, sell and supply natural or manufactur gas.

In 1969, the Corporation served 130 communities with 500 population or over, 8 smaller communities and 94 summer resorts. In addition, bulk power was supplied the cities of Saskatoon and Swift Current, the town of Battleford and Prince Albert Nation Park (Waskesiu). In February 1969, North-Sask Electric Ltd. was incorporated as wholly owned subsidiary to provide and improve electrical service to communities in nort ern Saskatchewan.

At the end of December, the Corporation served approximately 269,200 custome composed of 203,166 "urban" (defined as one in which there are at least six customer and 66,034 "rural" customers. Energy sales reached 4,100,000,000 kwh. with industri customers accounting for 41 p.c. and residential customers for 19 p.c. of the total. Durir 1969, 4,600,000,000 kwh. was supplied to the system, almost all of it generated in Corpor tion plants. This was the first full year of production at the Coteau Creek Hydro Electr Station. Total hydro generation amounted to 2,400,000,000 kwh. or 49.8 p.c. of tot generation in 1969. Steam generation from five plants supplied 45.4 p.c. of the total ar internal combustion the remainder. A new 150,000-kw. unit was placed in service Boundary Dam in December bringing total steam generating capacity to 682,000 kv compared to 467,000 kw. for hydro and 111,500 kw. for internal combustion and gas turbin The Corporation owned and operated 4,488 miles of 72-kv.-and-over transmission lines an 71,553 miles of less than 72 kv. (excluding urban distribution).

At the end of 1969, the Corporation had invested, at cost, $479,600,000 in electric system assets out of a total plant-in-service investment of $695,300,000.

18.—Growth of the Saskatchewan Power Corporation, 1960-69

Year	Seasonal Gross System Peak Load	Individual Meters in Communities Served	Power Distributed[1]	Revenue
	kw.	No.	kwh. x 103	$'000
.....	333,600	221,675	1,233,532	26,667
.....	370,000	229,336	1,498,056	30,263
.....	424,700	235,386	1,645,862	33,106
.....	471,000	240,812	1,926,863	36,893
.....	539,500	246,389	2,208,150	39,778
.....	696,100	294,135	2,871,800	46,145
.....	756,500	303,016	3,391,829	52,866
.....	862,000	309,203	3,705,977	57,223
.....	918,000	314,897	4,123,446	62,425
.....	956,000	317,525	4,635,500	67,020

[1]Power distributed=net system kwh. (net generated plus net purchased).

Alberta.—The generation and distribution of electric power in Alberta is handled by major investor-owned company groups and three municipal utilities. Several other icipal systems handle local distribution of power purchased from the investor-owned ties. The Alberta Power Commission acts as a regulatory body for the electrical utility stry in the province but has no facilities of its own.

-Statistics of Companies or Municipalities Providing Central Station Electrical Service in Alberta, 1969

Ownership and Company or Municipality	Net Capability as at Dec. 31	Net Peak Load during 1969	Net Generation during 1969
	kw.	kw.	kwh.
Privately Owned			
ry Power Ltd.....	1,249,000	1,028,900	5,187,152[1]
lian Utilities Ltd. and Northland Utilities Ltd.....	331,095	259,170	902,216
Totals, Privately Owned.....	**1,580,095**	...	**6,089,368**
Publicly Owned			
of Edmonton.....	392,000	363,000	1,668,613
of Lethbridge.....	30,700	31,500	154,873
of Medicine Hat.....	40,500	40,000	238,797[2]
Totals, Publicly Owned.....	**463,200**	...	**2,062,283**
Grand Totals.....	**2,043,295**	...	**8,151,651**

[1]Includes 48,975,200 kwh. supplied to British Columbia Hydro and Power Authority. [2]Includes 85,362,680 supplied to system.

The following relative percentages of capability and generation show that therm generation predominates as a source of electric power in Alberta and that the industry largely privately owned.

Method of Generation	P.C. of Capability	P.C. of Power Generated
Hydro	33.3	16.9
Steam and gas turbine	62.3	79.0
Internal combustion	4.4	4.1
Privately owned	77.3	74.7
Publicly owned	22.7	25.3

Following is a breakdown of the fuel used in larger thermal plants during 1969.

Company or Municipality	Gas	Oil	Coal
	Mcf.	gal.	tons
Calgary Power Ltd.—			
Wabamun	6,686,306	—	2,115,067
Canadian Utilities Ltd. and Northland Utilities Ltd.—			
Drumheller	—	—	61,678
Battle River	—	—	422,010
Valleyview	1,598,671	—	—
Simonette	1,435,575	—	—
Rainbow	—	11,990,136	—
Fairview	204,851	—	—
Miscellaneous	299,622	782,529	—
City of Edmonton	19,828,864	2,886,590	—
City of Lethbridge	3,061,483	—	—
City of Medicine Hat	4,119,779	—	—

British Columbia.—The British Columbia Hydro and Power Authority is a corpo tion and an agency of the Crown in right of the Province of British Columbia. B.C. Hyd operates an extensive system of public utility services. Electric energy is generat transmitted and distributed throughout areas of the province containing more than 90 p of the population. Natural gas is purchased and distributed in Greater Vancouver and the Fraser Valley eastward to Hope, and liquefied petroleum gas is distributed in Grea Victoria. B.C. Hydro operates three transportation services: an urban passenger transp tation system serves Greater Vancouver and Greater Victoria; an interurban passeng transportation system serves Greater Vancouver, the Fraser Valley eastward to Ho between Vancouver and Victoria and between Vancouver and Nanaimo (via ferries of t British Columbia Ferry Authority); and a rail freight system serves Greater Vancouv and the Fraser Valley eastward to Chilliwack.

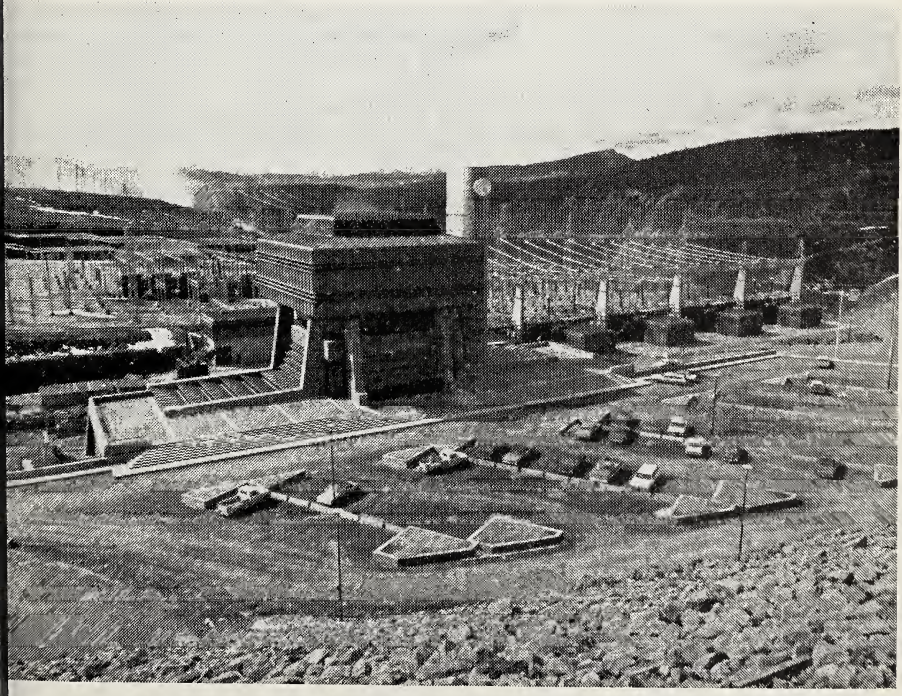
Of B.C. Hydro's total electric power requirements of 13,750,000,000 kwh. for the y ended Mar. 31, 1969, 9,356,000,000 kwh. or 68.0 p.c. were produced by hydro-elect stations and 3,013,000,000 kwh. or 21.9 p.c. by thermal plants; of the remainder, 542,000,0 kwh. were purchased and 839,000,000 kwh. were received from the United States as Canad share of downstream power benefits from the Duncan and Arrow storage projects. Ki watt-hours of electricity sold during the year (12,237,000,000) were 10.4 p.c. higher th during the previous year. Impressive rates of increase in kilowatt-hours consumed w recorded for all categories of customers during the year ended Mar. 31, 1969. Resident consumption moved up 13.8 p.c., commercial 11.2 p.c., and industrial and bulk power 1 p.c. As at that date, the number of customers served with electricity by B.C. Hydro tot

l 605,188, an increase of 22,055 during the year. The average annual rate for residential stomers dropped from 1.68 cents to 1.65 cents a kilowatt-hour, and the average annual sidential consumption rose from 6,222 kwh. to 6,674 kwh.

20.—Summary Statistics of the British Columbia Hydro and Power Authority, Year Ended Mar. 31, 1969

Item		Amount	Item		Amount
nerating capacity	kw.	3,055,842	Proportionate Sales—		
Hydro	"	*2,001,322*	Residential	p.c.	28
Thermal and diesel	"	*1,054,520*	Other systems (mainly residential)	"	2
			Commercial, industrial, etc	"	70
wer requirements	'000 kwh.	13,750,171	Pole Miles of Line—		
Generated	"	*12,369,176*	Transmission (high voltage)	No.	6,263
Purchased	"	*542,359*	Distribution primaries[1]	"	15,631
Duncan and Arrow storage downstream benefits	"	*838,636*	Revenue (electric)	$'000	149,360
stomers at year-end	No.	605,188	Capital Investment—		
			Gross plant in operation (electric)	$'000	1,458,576
ctricity sold	'000 kwh.	12,236,869	Net plant in operation (electric)	$'000	1,188,738

[1] Including 567 underground circuit miles.



Control building at the Gordon M. Shrum Generating Station, British Columbia's Peace River project. The building, resembling a giant transformer, houses control and maintenance facilities for one of the world's largest operating underground power plants which, by the end of 1971, will be operating at six tenths of its ultimate capacity of 2,300,000 kw.

The West Kootenay Power and Light Company in 1969 served directly 31,700 cu tomers in south-central British Columbia and an additional 18,800 were supplied by whol sale customers who retail within municipal areas. Total energy sales rose 9.4 p.c. in 19(to 734,000,000 kwh. and total assets reached $22,157,000. The company has an installe capacity of 47,250 kw. and, in addition, operates and maintains under management contra five hydro power plants owned by Cominco Ltd.

Yukon and Northwest Territories.—The Northern Canada Power Commissio operating under authority of the Northern Canada Power Commission Act (SC 1956, c. 4 is a federal agency concerned with the construction and management of public utiliti on a commercial basis; it is empowered to construct and operate public utility plants i the Northwest Territories, Yukon Territory and, subject to approval of the Governc General in Council, elsewhere in Canada. The authorizing Act requires that projec undertaken by the Commission shall be self-sustaining; consequently rates charged f utilities supplied must provide sufficient revenue to cover interest on investment, repay ment of principal over a period of years, operating and maintenance expenses and a co tingency reserve.

The Commission has hydro-electric power developments on the Yukon River ne Whitehorse and on the Mayo River near Mayo in the Yukon Territory; in the Northwe Territories, it has developments on the Snare River northwest of Yellowknife and th Taltson River northeast of Fort Smith.

The 4,500-kw. Mayo River hydro-electric power development has supplied power t mining properties in the Elsa and Keno areas and to the communities of Mayo and Ken City since 1952. The Whitehorse Rapids power development (hydro capacity 19,000 kw. in service since 1958, supplies power to the city of Whitehorse and a copper mining operatio located within a few miles of Whitehorse. A 225-mile transmission line, completed in 196 supplies the Anvil Mining Corporation's lead and zinc mine mill complex at Faro in th Vangorda Creek area. A 9,000-kw. peaking standby diesel generating plant, situate adjacent to the hydro plant at Whitehorse, was commissioned in December 1968; a additional 5,000-kw. diesel unit was installed in 1970.

The two Snare River hydro-power developments (total capacity 13,500 kw.) com missioned in 1948 and 1960, supply power to the gold mines in the Yellowknife area an to the city of Yellowknife. These two hydro plants are operated by remote control fro Yellowknife and will be supplemented by a 5,000-kw. diesel plant being constructed i Yellowknife, commencing in 1970. The Taltson River hydro-electric plant is an 18,000-kw development supplying the lead-zinc mining and milling operation at Pine Point and th communities of Fort Smith and Pine Point, N.W.T. This plant is operated by remot control from Fort Smith.

Diesel electric power plants are operated by the Commission at Aklavik, Coppermine Cambridge Bay, Fort Resolution, Fort Good Hope, Norman Wells, Chesterfield Inlet an Baker Lake in the Northwest Territories, at Dawson in the Yukon Territory, and at Field i British Columbia. The Commission also operates and maintains utility plants comprisin electric power, central heat, water and sewerage services at Inuvik, Frobisher Bay, For McPherson, Fort Simpson in the Northwest Territories and Moose Factory in Ontario and operates the water and sewerage systems at Dawson and Faro in the Yukon Territory.

Investor-owned generation provides electric-power service to several regions within th Territories. In the Yukon Territory, Yukon Electric Company Ltd. has generation facili ties near Whitehorse and several isolated diesel plants. In addition, the Company provide distribution of electric power in Whitehorse, Carmacks, Carcross and Keno Hill with supplie purchased from the Northern Canada Power Commission. In the Northwest Territories Plains Western Gas and Electric Co. Ltd. distributes power (supplied by NCPC) in Yellow knife, and Northland Utilities has generation and distribution facilities in Hay River, For Providence and Enterprise.

CHAPTER XVI.—MANUFACTURES*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

Section 1 of this Chapter contains a summary of the regularly issued statistical data the manufacturing industries of Canada, based on the annual Census of Manufactures d on monthly and quarterly surveys. Section 2 is a special study of interprovincial ipments of the products of Canadian manufacturers which is based on the results of the st complete survey to be taken of all but the smallest manufacturers and relates to the ar 1967.

ction 1.—Statistical Data on Canadian Manufacturing Industries

Statistics on the manufacturing industries are issued by the Dominion Bureau of atistics on an annual, monthly and quarterly basis, depending on the type of data. The sic annual data are the results of the annual Census of Manufactures. Among the nthly figures available, two important sets of data provide a basis for projecting figures the annual Census of Manufactures—the monthly survey of manufacturers' shipments, ventories and orders, and monthly estimates of employees by industry.

The monthly shipments, inventories and orders series is published for the manufac- ring industries of Canada and the provinces, with breakdowns by industry group and selected industry in the case of the totals for Canada. They are based on a survey of pondents to the annual Census and are projections of the Census total, with the quali- ation that new entries into the manufacturing industries since then are not covered. his contributes to the tendency shown by monthly shipments figures, for instance, to l slightly below those of the subsequent annual Census for the same year.) The monthly imates of employees by industry provide figures on total employees in the manufacturing lustries for Canada and the provinces, each classified into durable and non-durable lustries. Like the monthly shipments survey, the figures are based partly on statistical mpling. Both sets of monthly figures also yield totals for the calendar year, while the nual Census includes some reports made on a respondent's fiscal year differing from the endar year. (The effect of this is not large.)

* Prepared in the Manufacturing and Primary Industries Division, Dominion Bureau of Statistics.

These data relate to establishments—roughly corresponding to the popular conceptio of a plant, factory or mill—and, for certain statistics, to non-manufacturing units know as "head offices, sales offices and auxiliary units". For some purposes, companies rathe than plants or factories are of interest. For example, a company owning factories, mine and merchandising outlets will normally report its profit for the whole company rathe than dividing it among the different industrial activities in which it is engaged. Thus, th quarterly survey of corporation profits provides figures on sales, profits and certain othe statistics for whole companies classified to industries on the basis of their principal activitie (for instance, factories might be included in mining or mines in the manufacturing industry Such figures are generally not comparable with establishment statistics.

Various other monthly and quarterly surveys relate to commodities rather than t establishments or companies. That is, they account for production or shipments o particular products without regard to the industry in which they are produced.

In addition to providing estimates of over-all employment in manufacturing (an other industries), monthly surveying of employment, hours and payrolls results in indexe of employment for larger establishments by industry and by province and sub-provinci area, and in data on average hours and earnings. Monthly indexes of industrial productio provide measures of the physical volume of output of the manufacturing industries. Tha is, they measure output, net of the effects of price changes. These indexes afford annua averages which can be used to indicate movement in the real domestic product at facto cost originating in the manufacturing industries. In addition, many users find valuabl information in the large number of monthly industry selling price indexes for variou manufacturing industries.

Subsection 1.—Post-Census Data on Manufacturing

This Subsection is included to give some preliminary data for 1969 and 1970 based o monthly or quarterly surveys, since the results of the Census of Manufactures for 1969 wer still in the processing stage at the time of preparation of this Chapter. Some factor influencing the levels of current and annual Census figures in comparison with each othe are indicated in the preceding text.

Table 1 compares the value of shipments of goods of own manufacture by provinc for the year 1970 with comparable data for 1969 and earlier censuses, and Table 2 make similar comparisons for industry groups. Table 3 gives estimates of employees in Canadia manufacturing industries by province for 1968, 1969 and (August) 1970, with 1968 Censu figures included for comparison. Table 4 gives company data on profitability in variou manufacturing industry groups in 1969 compared with annual Census figures from 1962.

1.—Value of Shipments of Goods of Own Manufacture, by Province, 1961 and 1966-70

Province or Territory	1961	1966	1967	1968	1969[p]	1970[p]
	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000
Newfoundland	135.9	194.1	186.1	197.5	216.4	235.3
Prince Edward Island	30.6	46.8	51.1	51.7	..	..
Nova Scotia	381.4	612.5	610.3	663.3	719.5	733.3
New Brunswick	390.6	547.2	573.9	633.6	659.9	674.4
Quebec	7,022.2	10,464.5	10,966.4	11,742.9	12,700.5	12,912.7
Ontario	11,563.7	19,452.6	20,259.7	21,942.6	23,426.4	23,439.6
Manitoba	716.7	1,019.0	1,079.7	1,118.8	1,199.0	1,215.1
Saskatchewan	331.9	470.4	479.6	489.2	525.9	573.5
Alberta	935.5	1,429.0	1,555.0	1,667.0	1,801.6	1,820.0
British Columbia	1,927.0	3,063.7	3,190.0	3,550.4	3,801.9	3,646.2
Yukon and Northwest Territories	3.4	3.7	3.7	4.5	..	..
Canada	**23,439.5**	**37,303.5**	**38,955.4**	**42,061.6**	**45,110.8**[1]	**45,313.0**[1]

[1]Includes Prince Edward Island and the Yukon and Northwest Territories.

2.—Value of Shipments of Goods of Own Manufacture, by Industry Group, 1961 and 1966-70

Industry Group	1961	1966	1967	1968	1969p	1970p
	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000
ood and beverage industries	5,039.5	7,062.0	7,429.3	7,674.3	8,153.1	8,452.8
obacco products industries	334.9	429.8	493.3	508.8	466.2	520.5
ubber industries	331.1	540.5	584.4	565.3	625.2	609.4
eather industries	291.2	370.9	369.1	396.2	404.7	399.7
extile industries	874.5	1,346.9	1,404.9	1,526.8	1,662.8	1,539.7
nitting mills	219.4	320.9	325.5	377.1	380.2	384.2
lothing industries	802.7	1,152.6	1,176.8	1,258.3	1,267.5	1,256.1
ood industries	1,036.2	1,592.8	1,675.6	1,966.3	2,108.5	1,921.7
urniture and fixture industries	359.6	602.7	640.2	660.3	711.4	706.7
aper and allied industries	2,203.5	3,165.7	3,231.2	3,422.0	3,788.5	3,850.4
rinting, publishing and allied industries	854.8	1,204.7	1,297.3	1,370.4	1,473.3	1,515.4
rimary metal industries	1,937.0	3,085.1	3,052.5	3,384.2	3,544.4	3,997.7
letal fabricating industries (except machinery and transportation equipment industries)	1,510.6	2,763.7	2,732.1	2,899.9	3,130.9	3,188.0
lachinery industries (except electrical machinery)	658.3	1,464.2	1,516.9	1,480.4	1,644.3	1,692.2
ransportation equipment industries	1,845.8	4,238.4	4,720.9	5,597.4	6,170.9	5,566.7
lectrical products industries	1,208.3	2,186.6	2,312.5	2,407.5	2,641.3	2,698.6
on-metallic mineral products industries	676.0	1,121.4	1,082.2	1,204.2	1,252.0	1,230.1
etroleum and coal products industries	1,219.2	1,495.3	1,558.2	1,676.0	1,754.5	1,816.2
hemical and chemical products industries	1,435.8	2,174.2	2,268.8	2,428.6	2,580.8	2,630.6
iscellaneous manufacturing industries	600.5	985.0	1,083.8	1,257.5	1,350.5	1,336.4
All Manufacturing Industries	**23,439.0**	**37,303.5**	**38,955.4**	**42,061.6**	**45,110.8**	**45,313.0**

3.—Employees in Manufacturing Industries, by Province, 1968-70

Province or Territory	1968 Annual Census	Monthly Estimates		
		1968 Average	1969 Average	August 1970
	'000	'000	'000	'000
ewfoundland	11.9	11.7	12.0	13.9
rince Edward Island	2.3	2.5	2.5	3.3
ova Scotia	32.9	33.0	33.0	34.0
ew Brunswick	28.1	28.7	29.2	31.1
uebec	520.4	515.5	527.0	541.7
ntario	810.8	810.6	837.0	844.8
anitoba	48.1	47.6	50.2	49.8
askatchewan	15.7	15.6	15.5	15.9
lberta	49.8	50.4	54.1	55.6
ritish Columbia	121.5	123.3	130.7	130.2
ukon and Northwest Territories	0.2	..	..	..
Canada	**1,641.6**	**1,639.2**	**1,691.4**	**1,720.4**

4.—Net Profit Before Taxes, as a Percentage of Total Revenue of Corporations classified to the Manufacturing Industries and Forestry, 1962-69

Industry Group	1962	1963	1964	1965	1966	1967	1968	1969
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
ood and beverage industries	5.7	6.4	6.7	6.3	5.9	5.7	6.0	6.4
ubber industries	3.7	5.4	5.8	6.5	6.8	6.9	6.7	8.0
extile industries	4.7	6.2	5.9	5.6	4.6	3.4	3.7	4.0
ood industries	3.7	6.3	5.8	3.8	4.0	2.9	6.1	5.9
aper, allied industries and forestry	14.4	14.2	15.8	13.3	12.4	7.9	6.9	8.7
rinting, publishing and allied industries	7.4	7.6	9.2	9.4	8.3	8.2	9.3	8.5
rimary metal industries	10.7	10.8	12.6	13.9	11.8	8.8	10.4	8.9
letal fabricating industries (except machinery and transportation equipment)	4.7	5.4	5.8	6.1	6.0	5.7	5.1	5.9
lachinery industries (except electrical machinery)	7.6	7.9	8.4	7.2	6.9	6.1	6.5	7.0
ransportation equipment industries	8.5	9.2	7.3	6.3	4.2	4.5	5.0	5.2
lectrical products industries	4.9	5.6	6.1	6.4	6.1	4.5	4.3	5.0
on-metallic mineral products industries	8.4	8.8	10.0	10.8	10.9	6.9	7.4	7.0
etroleum and coal products industries	7.3	7.3	7.7	8.0	8.9	9.2	9.4	8.6
hemical and chemical products industries	9.1	10.1	10.9	11.1	10.2	8.9	9.6	8.9
ther manufacturing industries	7.1	7.3	7.3	6.2	9.4	8.8	8.4	8.3
All Manufacturing Industries	**7.4**	**8.1**	**8.4**	**8.0**	**7.4**	**6.3**	**6.6**	**6.8**

Subsection 2.—Census of Manufactures Data by Industry

Results of the Census of Manufactures are published industry by industry as they become available. Although statistics for the 1969 Census were appearing as this Chapter was being prepared (January 1970), the Census of 1968 was the latest for which all industries had been issued. Tables 5 to 7 show selected results of the 1968 Census for industry groups and individual industries compared with figures for earlier censuses. To help visualize some of the changes that took place in individual manufacturing industries in 1968, Table 8 shows the largest increases or decreases in number of employees; widely divergent movements characterized these industries.

5.—Summary Statistics of Manufactures, 1961-68

Year	Manufacturing Activity							
	Establishments	Production and Related Workers			Cost of Fuel and Electricity[1]	Cost of Materials and Supplies Used	Value of Shipments of Goods of Own Manufacture	Value Added
		Number	Man-Hours Paid	Wages				
	No.		'000	$'000	$'000	$'000	$'000	$'000
1961	33,357	939,413	1,968,163	3,532,943	516,409	12,579,798	23,438,956	10,434,832
1962	33,414	974,376	2,071,376	3,834,514	540,447	13,974,877	25,790,087	11,429,644
1963	33,119	1,003,566	2,137,977	4,095,916	564,387	15,337,534	28,014,888	12,272,734
1964	33,630	1,057,502	2,265,188	4,513,633	615,108	16,928,476	30,856,099	13,535,991
1965	33,310	1,115,892	2,384,002	5,012,345	675,641	18,622,213	33,889,425	14,927,764
1966	33,377	1,172,943	2,498,012	5,575,206	731,726	20,642,695	37,303,455	16,351,740
1967	33,267	1,168,651	2,478,916	5,869,085	759,780	21,371,785	38,955,389	17,005,696
1968	32,643	1,160,226	2,458,791	6,278,429	808,764	23,090,970	42,061,555	18,332,204

Year	Total Activity							
	Establishments	Working Owners and Partners		Total Employees[2]		Total Cost of Materials and Supplies Used and Goods Purchased for Resale[3]	Total Operational Revenue[4]	Total Value Added[5]
		Number	Withdrawals	Number	Salaries and Wages			
	No.		$'000		$'000	$'000	$'000	$'000
1961	33,357	16,989	57,980	1,352,605	5,701,651	14,564,247	25,895,611	10,931,561
1962	33,414	17,228	60,744	1,389,516	6,096,174	16,118,144	28,473,319	11,986,666
1963	33,119	16,030	59,426	1,425,440	6,495,289	17,558,196	30,823,107	12,875,073
1964	33,630	15,747	60,098	1,491,257	7,080,939	19,467,899	34,071,582	14,247,184
1965	33,310	14,620	59,457	1,570,299	7,822,925	21,563,010	37,638,412	15,785,311
1966	33,377	13,894	60,076	1,646,024	8,695,890	24,195,610	41,722,527	17,260,256
1967	33,267	13,377	59,187	1,652,827	9,254,190	25,546,764	44,143,808	18,049,639
1968	32,643	12,084	58,798	1,641,559	9,896,397	27,517,597	47,627,731	19,494,039

[1] Cannot be reported separately for manufacturing and non-manufacturing activities but related substantially to manufacturing activity. [2] Includes production and related workers, administrative and office employees, sales, distribution and other employees; excludes working owners and partners. [3] Includes supplies used in both manufacturing and non-manufacturing activity. [4] Includes shipments of goods of own manufacture, value of shipments of goods purchased for resale and other operational revenue. [5] Value of total operational revenue less total cost of materials, supplies, fuel and electricity used and goods purchased for resale in the same condition; all adjusted for inventory changes where required.

Industry Group and Year	Establishments	Manufacturing Activity: Production and Related Workers: Number	Production and Related Workers: Man-Hours Paid	Production and Related Workers: Wages	Cost of Fuel and Electricity	Cost of Materials and Supplies Used	Value of Shipments of Goods of Own Manufacture	Value Added	Total Activity: Total Employees: Number	Total Employees: Salaries and Wages	Total Value Added
	No.		'000	$'000	$'000	$'000	$'000	$'000		$'000	$'000
Food and beverage industries....1967	6,737	142,172	303,247	625,884	95,189	4,850,398	7,429,270	2,516,832	228,748	1,140,377	2,644,474
1968	6,361	141,731	300,817	668,261	99,410	4,973,389	7,674,300	2,636,728	226,470	1,211,043	2,771,110
Tobacco products industries....1967	34	7,873	15,704	40,021	1,665	322,943	493,260	182,369	10,555	59,779	183,986
1968	30	7,505	15,000	42,252	1,702	320,785	508,814	169,808	10,179	63,901	170,751
Rubber industries....1967	107	18,390	39,732	97,644	7,938	270,487	584,357	306,962	26,906	155,953	321,877
1968	104	16,364	34,674	93,116	7,948	256,192	565,339	303,283	24,833	154,959	318,300
Leather industries....1967	529	26,773	54,294	92,039	2,750	179,435	369,115	183,808	31,496	121,760	185,742
1968	513	27,017	55,147	100,033	2,927	192,767	396,242	201,918	31,741	131,879	204,455
Textile industries....1967	990	60,161	129,425	243,351	21,673	795,599	1,404,939	601,581	77,360	359,553	612,500
1968	967	57,840	123,258	253,898	22,801	847,929	1,526,824	652,453	73,234	364,097	661,218
Knitting mills....1967	339	19,720	41,828	63,915	2,549	179,461	325,543	143,033	22,814	85,434	143,805
1968	342	20,615	43,816	71,072	2,747	209,199	377,069	170,252	23,845	94,334	170,607
Clothing industries....1967	2,311	85,422	170,459	270,432	4,069	614,267	1,176,755	557,730	98,263	356,027	564,732
1968	2,282	85,395	170,446	292,060	4,109	661,990	1,258,268	600,133	97,596	378,694	605,399
Wood industries....1967	3,793	77,428	165,380	364,575	31,307	912,692	1,675,642	733,283	89,873	451,192	750,956
1968	3,477	77,662	165,147	396,392	33,842	1,052,390	1,966,340	896,061	90,309	490,721	909,732
Furniture and fixture industries....1967	2,296	35,836	76,272	147,331	6,067	302,565	640,196	334,784	43,895	201,833	339,881
1968	2,300	35,117	74,285	154,488	6,525	312,168	660,281	346,805	43,219	211,140	351,880
Paper and allied industries....1967	633	89,491	194,857	549,486	180,879	1,642,593	3,231,176	1,434,412	118,609	781,885	1,458,212
1968	635	88,568	192,309	584,041	189,853	1,753,820	3,422,015	1,479,229	117,959	836,084	1,505,910
Printing, publishing and allied industries....1967	3,568	47,877	97,615	269,501	8,572	428,418	1,297,275	862,082	83,594	497,916	877,722
1968	3,600	48,145	97,533	289,379	9,440	448,168	1,370,351	916,397	84,143	535,237	931,213
Primary metal industries....1967	415	86,784	183,065	541,970	131,955	1,544,684	3,052,537	1,383,609	112,945	754,681	1,408,728
1968	405	86,237	180,101	570,183	142,944	1,733,408	3,384,248	1,514,867	112,182	794,349	1,544,870
Metal fabricating industries (except machinery and transportation equipment industries)....1967	3,956	103,116	220,255	559,680	30,712	1,310,830	2,732,066	1,404,551	139,232	817,639	1,463,965
1968	3,983	101,319	217,102	587,170	32,256	1,392,189	2,899,875	1,493,521	137,559	864,199	1,562,217
Machinery industries (except electrical machinery)....1967	752	47,506	102,665	273,220	11,232	779,260	1,516,875	736,978	79,171	505,095	967,909
1968	795	44,357	94,371	269,355	11,470	735,139	1,480,375	737,399	76,350	520,131	1,006,918
Transportation equipment industries....1967	852	109,440	235,338	666,422	32,709	2,875,703	4,720,876	1,832,835	150,215	979,333	2,051,904
1968	871	108,595	237,952	747,765	36,408	3,552,894	5,597,442	2,045,552	149,379	1,102,226	2,306,454
Electrical products industries....1967	667	78,309	162,947	377,416	17,389	1,186,291	2,312,519	1,106,808	127,561	718,584	1,217,877
1968	689	76,410	161,102	401,171	18,189	1,220,287	2,407,472	1,173,800	124,215	747,909	1,298,389
Non-metallic mineral products industries....1967	1,291	37,467	84,440	207,204	64,868	413,257	1,082,213	615,308	51,276	301,482	640,501
1968	1,260	37,795	84,228	223,174	67,968	456,870	1,204,177	686,041	51,670	326,042	710,614
Petroleum and coal products industries....1967	91	6,839	15,480	52,462	13,695	1,253,774	1,558,207	292,791	15,662	128,781	295,920
1968	95	6,876	15,659	56,703	16,768	1,347,420	1,675,999	329,417	15,631	138,470	335,134
Chemical and chemical products industries....1967	1,142	37,955	80,710	211,854	83,698	1,012,819	2,268,769	1,193,561	75,245	488,652	1,273,292
1968	1,124	38,848	82,921	232,389	88,946	1,060,692	2,428,595	1,285,018	77,027	537,992	1,367,680
Miscellaneous manufacturing industries....1967	2,764	50,092	105,203	214,678	10,865	496,312	1,083,797	582,378	69,407	348,236	645,657
1968	2,810	53,830	112,923	245,526	12,511	563,272	1,257,529	693,522	74,018	392,990	761,188
Totals....1967	**33,267**	**1,168,651**	**2,478,916**	**5,869,085**	**759,780**	**21,371,785**	**38,955,389**	**17,005,696**	**1,652,827**	**9,254,190**	**18,049,639**
1968	**32,643**	**1,160,226**	**2,458,791**	**6,278,429**	**808,764**	**23,099,970**	**42,061,555**	**18,332,204**	**1,641,559**	**9,896,397**	**19,491,039**

7.—Summary Statistics of the Forty Leading Industries, 1968

(Ranked according to value of shipments of goods of own manufacture)

Rank	Industry	Establishments	Manufacturing Activity							Total Activity		
			Production and Related Workers			Cost of Fuel and Electricity	Cost of Materials and Supplies Used	Value of Shipments of Goods of Own Manufacture	Value Added	Total Employees		Total Value Added
			Number	Man-Hours Paid	Wages					Number	Salaries and Wages	
		No.		'000	$'000	$'000	$'000	$'000	$'000		$'000	$'000
1	Motor vehicle manufacturers	21	26,965	62,014	231,001	11,472	2,195,259	3,002,279	827,182	39,112	349,489	1,053,754
2	Pulp and paper mills	137	60,296	131,653	437,135	181,194	1,183,007	2,446,874	1,080,941	73,498	552,162	1,089,986
3	Slaughtering and meat processors	433	22,294	47,025	132,210	10,799	1,448,562	1,772,506	310,009	30,540	190,975	321,653
4	Petroleum refining	41	6,284	14,363	53,064	15,950	1,315,863	1,621,887	307,298	9,091	80,010	314,425
5	Iron and steel mills	43	36,324	76,124	250,865	52,870	630,974	1,367,087	684,684	44,634	323,573	692,767
6	Motor vehicle parts and accessories manufacturers	179	31,720	69,684	212,769	13,863	667,993	1,193,805	512,418	39,454	280,666	521,489
7	Dairy factories	1,037	13,406	29,455	65,210	21,436	874,206	1,184,638	290,529	29,841	160,943	316,635
8	Sawmills and planing mills	1,894	42,820	92,314	226,359	22,197	634,164	1,179,572	542,206	47,987	264,281	545,183
9	Miscellaneous machinery and equipment manufacturers	609	30,407	65,225	184,858	7,600	484,022	1,008,012	519,247	47,813	313,711	566,205
10	Smelting and refining	24	25,572	51,904	172,282	72,387	382,435	932,585	477,763	34,710	250,948	493,024
11	Manufacturers of industrial chemicals	139	12,963	28,066	93,566	70,284	342,555	846,952	431,211	20,335	157,016	451,764
12	Metal stamping, pressing and coating industry	734	22,358	48,255	127,357	8,431	418,699	771,326	348,960	29,560	185,161	360,619
13	Miscellaneous food industries	275	10,056	21,645	49,732	7,481	384,480	676,825	286,353	15,882	91,598	301,100
14	Communications equipment manufacturers	192	27,820	59,239	144,700	3,542	285,718	674,467	386,452	43,117	248,880	402,275
15	Aircraft and parts manufacturers	85	22,247	46,413	146,881	4,114	293,962	653,899[1]	355,823	35,143	257,734	367,078
16	Commercial printing	2,088	27,293	55,894	154,329	4,580	244,987	624,142	377,281	38,437	239,714	384,319
17	Publishing and printing	684	16,046	31,799	102,671	4,189	131,713	537,863	402,009	34,113	219,774	401,817
18	Feed manufacturers	872	5,237	11,899	25,480	7,382	397,698	513,287	108,377	9,256	48,412	130,987
19	Fruit and vegetable canners and preservers	295	14,738	30,621	57,883	6,318	302,015	509,986	208,009	19,343	90,073	214,799
20	Bakeries	2,135	17,932	38,632	79,281	12,533	214,663	484,135	257,068	32,342	153,634	269,425
21	Women's clothing factories	642	27,075	53,836	97,401	1,106	264,313	476,722	215,047	31,054	126,768	216,668
22	Synthetic textile mills	81	15,700	33,854	75,496	9,345	238,917	454,183	204,164	20,293	108,357	206,848
23	Men's clothing factories	483	28,925	58,168	99,557	1,527	241,788	441,194	200,848	33,201	131,162	202,128
24	Manufacturers of electrical industrial equipment	157	14,716	30,850	84,137	3,672	185,678	433,399	244,040	22,634	145,865	249,383
25	Miscellaneous metal fabricating industries	487	15,352	31,864	82,238	5,925	204,430	421,543	213,663	20,825	121,923	222,828
26	Wire and wire products manufacturers	230	12,152	26,588	70,835	4,925	204,600	387,591	178,516	16,082	101,850	183,161
27	Plastics fabricators, *n.e.s.*	480	15,187	32,281	66,532	5,084	179,199	375,793	194,926	18,976	95,406	199,032

28	Fabricated structural metal industry	116	12,119	25,658	81,699	3,157	166,002	367,139[1]	197,980	17,150	120,217	223,827
29	Household furniture industry	1,734	20,409	43,215	86,096	3,316	165,428	351,113	185,415	24,229	112,046	187,117
30	Breweries	47	4,992	10,545	35,582	4,314	90,990	349,290	256,154	9,399	72,916	258,911
31	Miscellaneous paper converters	214	10,087	21,429	50,591	3,141	183,411	339,960	153,234	15,003	86,642	167,993
32	Tobacco products manufacturers	19	6,143	12,326	37,121	1,188	171,350	331,061	154,832	8,570	56,722	155,317
33	Manufacturers of pharmaceuticals and medicines	151	5,272	10,720	24,857	1,961	109,551	325,611	216,842	12,441	81,667	223,875
34	Fish products industry	367	16,565	34,529	52,255	5,314	217,816	324,567	101,810	19,478	68,545	108,627
35	Manufacturers of electric wire and cable	32	5,833	12,380	37,052	3,035	206,914	323,503	110,303	8,343	55,973	112,242
36	Rubber tire and tube manufacturers	13	7,069	14,975	47,816	4,417	157,683	323,351	163,282	8,972	62,574	164,511
37	Soft drink manufacturers	441	5,965	12,844	28,253	6,201	123,334	305,449	177,203	14,921	82,025	181,921
38	Distilleries	25	3,189	6,880	20,765	4,321	97,001	300,967	218,577	5,778	40,631	219,047
39	Cotton yarn and cloth mills	34	11,814	23,908	49,625	5,156	176,695	297,227	108,196	14,614	68,045	108,083
40	Manufacturers of major appliances (electric and non-electric)	31	8,264	17,299	44,075	3,013	168,930	293,489	129,644	12,185	70,986	137,260
	Totals, Leading Industries	**17,701**	**719,606**	**1,526,373**	**4,119,616**	**618,740**	**16,387,005**	**29,225,279**	**12,338,496**	**1,008,356**	**6,269,074**	**12,928,083**
	Totals, All Manufacturing Industries	**32,643**	**1,160,226**	**2,458,791**	**6,278,429**	**808,764**	**23,090,970**	**42,061,554**	**18,332,204**	**1,641,559**	**9,896,397**	**19,494,039**

[1] Value of production, rather than shipments of goods of own manufacture, is shown.

8.—Industries Showing Changes of 1,000 or More in Number of Employees, 1967-68

(Ranked according to numerical increase or decrease)

Rank	Industry	Total Employees		Change 1967-68	
		1967	1968	Number	Percent
	Increases—				
1	Motor vehicle parts and accessories manufacturers	34,858	39,454	4,596	13.
2	Plastics fabricators, *n.e.s.*	15,014	18,976	3,962	26.
3	Communications equipment manufacturers	40,515	43,117	2,602	6.
4	Truck body and trailer manufacturers	7,053	8,625	1,572	22.
5	Fish products industry	17,960	19,478	1,518	8.
6	Boiler and plate works	6,622	7,962	1,340	20.
7	Miscellaneous vehicle manufacturers	2,905	3,940	1,035	35.
	Decreases—				
1	Shipbuilding and repair	18,929	15,660	−3,269	−17.
2	Cotton yarn and cloth mills	17,170	14,614	−2,556	−14.
3	Agricultural implement industry	14,553	12,107	−2,446	−16.
4	Aircraft and parts manufacturers	37,235	35,143	−2,092	−5.
5	Motor vehicle manufacturers	40,861	39,112	−1,749	−4.
6	Dairy factories	31,312	29,841	−1,471	−4.
7	Other rubber industries	11,441	10,011	−1,430	−12.
8	Bakeries	33,755	32,342	−1,413	−4.
9	Fabricated structural metal industry	18,547	17,150	−1,397	−7.
10	Manufacturers of major appliances (electric and non-electric)	13,523	12,185	−1,338	−9.
11	Manufacturers of electrical industrial equipment	23,903	22,634	−1,269	−5.
12	Railroad rolling stock industry	6,215	5,048	−1,167	−18.
13	Miscellaneous machinery and equipment manufacturers	48,852	47,813	−1,039	−2.

Subsection 3.—Distribution of Manufacturing by Province and by Census Metropolitan Area

Distribution by Province

According to the results of the Census of Manufactures, Central Canada accounte for about four of every five dollars of all value added by the manufacturing activity of tl manufacturing industries of Canada in 1968; Ontario's share was 53.0 p.c., and Quebec share 28.4 p.c. British Columbia was third in this respect, with 8.6 p.c. of the value adde by manufacture, the Prairie Provinces accounted for 6.6 p.c. and the Atlantic Provinc for 3.3 p.c. One way of comparing the intensity of manufacturing activity in these regio is in terms of value added per capita of their population. The Canada average was $88 per capita but the Ontario average per capita of its population was $1,330, reflecting th high degree of industrialization of that province's economy. Comparable per capit rates of manufacturing activity for other regions were: Quebec, $880; British Columbi $785; Prairie Provinces, $352; and Atlantic Provinces, $303.

NOTE.—Based on the revised standard industrial classification and new establishment and total activity concepts.

Province or Territory and Year	Estab-lish-ments	Manufacturing Activity							Total Activity		
		Production and Related Workers			Cost of Fuel and Electricity	Cost of Materials and Supplies Used	Value of Shipments of Goods of Own Manufacture	Value Added	Total Employees		Total Value Added
		Number	Man-Hours Paid	Wages					Number	Salaries and Wages	
	No.		'000	$'000	$'000	$'000	$'000	$'000		$'000	$'000
Newfoundland 1967	263	9,389	20,386	40,627	9,265	93,980	186,056	86,689	11,620	54,246	90,632
1968	254	9,609	21,009	42,964	9,520	99,169	197,464	88,386	11,908	57,582	92,583
Prince Edward Island 1967	145	1,751	3,695	5,352	867	34,764	51,083	15,504	2,253	7,671	16,935
1968	138	1,730	3,517	5,727	977	34,162	51,657	16,569	2,255	8,219	17,534
Nova Scotia 1967	904	25,463	53,797	99,011	14,749	357,738	610,299	240,783	33,025	141,729	251,812
1968	852	25,187	52,198	103,254	16,590	385,378	663,335	261,044	32,894	148,811	272,288
New Brunswick 1967	676	20,252	44,486	85,495	23,516	342,586	573,897	210,129	26,770	121,406	221,440
1968	620	21,521	46,103	93,856	24,461	374,338	633,577	240,753	28,139	133,380	249,012
Quebec 1967	10,772	372,408	796,825	1,696,769	222,829	5,935,243	10,966,429	4,855,896	524,688	2,739,520	5,088,243
1968	10,513	370,537	790,757	1,817,303	236,395	6,341,337	11,742,911	5,215,464	520,409	2,914,622	5,455,874
Ontario 1967	13,076	571,106	1,210,715	3,030,681	352,475	10,982,235	20,259,696	9,032,055	818,227	4,822,183	9,732,956
1968	12,932	563,777	1,197,631	3,238,023	372,847	11,932,954	21,942,620	9,714,889	810,772	5,171,178	10,516,406
Manitoba 1967	1,444	34,944	73,617	154,965	21,433	638,117	1,079,730	424,923	49,325	241,311	440,984
1968	1,393	34,153	71,571	161,942	23,860	657,609	1,118,813	443,002	48,100	251,869	463,577
Saskatchewan 1967	779	10,222	21,612	51,491	10,130	305,487	479,582	165,986	15,611	83,558	174,505
1968	756	10,348	21,807	56,447	11,000	311,760	489,210	170,002	15,654	89,955	179,420
Alberta 1967	1,803	33,889	71,755	171,848	24,706	964,870	1,554,985	574,219	49,568	272,325	599,283
1968	1,822	33,962	71,432	183,747	26,490	1,041,058	1,667,034	604,529	49,759	292,983	629,197
British Columbia 1967	3,384	89,125	181,813	532,128	79,743	1,714,610	3,189,977	1,397,955	121,594	769,286	1,430,999
1968	3,331	89,268	182,486	574,288	86,547	1,910,838	3,550,399	1,575,436	121,490	826,671	1,615,580
Yukon Territory 1967	12	47	100	270	37	238	835	690	71	380	728
1968	18	62	132	330	45	327	1,194	834	86	438	898
Northwest Territories 1967	9	55	114	446	29	1,917	2,821	867	75	575	1,121
1968	14	72	148	549	31	2,040	3,341	1,296	93	689	1,670
Canada 1967	**33,267**	**1,168,651**	**2,478,916**	**5,869,085**	**759,780**	**21,371,785**	**38,955,389**	**17,005,696**	**1,652,827**	**9,254,190**	**18,049,639**
1968	**32,643**	**1,169,226**	**2,458,791**	**6,278,429**	**808,764**	**23,090,970**	**42,061,555**	**18,332,204**	**1,641,559**	**9,896,397**	**19,491,039**

10.—Summary Statistics of Manufactures, by Province and Industry Group, 1968

Province and Industry Group	Establishments	Manufacturing Activity							Total Activity		
		Production and Related Workers			Cost of Fuel and Electricity	Cost of Materials and Supplies Used	Value of Shipments of Goods of Own Manufacture	Value Added	Total Employees		Total Value Added
		Number	Man-Hours Paid	Wages					Number	Salaries and Wages	
	No.		'000	$'000	$'000	$'000	$'000	$'000		$'000	$'000
Newfoundland											
Food and beverage industries	96	5,162	11,257	15,009	2,128	43,248	81,415	34,606	6,197	20,580	35,902
Tobacco products industries	...	...	...	...	...	...	...	...	1	1	—
Leather industries	3	1	1	1	1	1	1	1	1	1	1
Textile industries	1	1	1	1	1	1	1	1	1	1	1
Knitting mills	1	1	1	1	1	1	1	1	1	1	1
Clothing industries	2	1	1	1	1	1	1	1	1	1	1
Wood industries	71	287	611	964	198	2,475	4,534	1,844	342	1,243	1,933
Furniture and fixture industries	5	1	1	1	1	1	1	1	1	1	1
Paper and allied industries	4	1	1	1	1	1	1	1	1	1	1
Printing, publishing and allied industries	26	272	579	1,262	95	1,072	5,128	3,962	504	2,332	3,929
Primary metal industries	2	1	1	1	1	1	1	1	1	1	1
Metal fabricating industries (except machinery and transportation equipment industries)	12	369	802	1,942	86	3,523	7,210	3,638	454	2,499	3,800
Machinery industries (except electrical machinery)	...	...	...	...	...	...	...	...	63	615	—
Transportation equipment industries	9	1	1	1	1	1	1	1	1	1	1
Electrical products industries	1	1	1	1	1	1	1	1	1	1	1
Non-metallic mineral products industries	10	357	862	1,939	604	3,132	7,833	4,509	451	2,535	4,774
Petroleum and coal products industries	1	1	1	1	1	1	1	1	1	1	1
Chemical and chemical products industries	4	1	1	1	1	1	1	1	1	1	1
Miscellaneous manufacturing industries	6	51	107	179	17	249	728	448	64	265	460
Totals, Newfoundland	**254**	**9,609**	**21,009**	**42,964**	**9,520**	**99,169**	**197,464**	**88,386**	**11,908**	**57,582**	**92,583**
Prince Edward Island											
Food and beverage industries	76	1,312	2,682	4,196	844	28,598	40,494	11,370	1,657	5,856	12,161
Leather industries	1	1	1	1	1	1	1	1	1	1	1
Textile industries	4	1	1	1	1	1	1	1	1	1	1
Wood industries	24	36	75	127	18	183	477	270	45	173	291
Furniture and fixture industries	1	1	1	1	1	1	1	1	1	1	1
Paper and allied industries	1	1	1	1	1	1	1	1	1	1	1
Printing, publishing and allied industries	8	1	1	1	1	1	1	1	1	1	1
Primary metal industries	1	1	1	1	1	1	1	1	1	1	1
Metal fabricating industries (except machinery and transportation equipment industries)	5	1	1	1	1	1	1	1		1	1

Machinery industries (except electrical machinery)..	2	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Transportation equipment industries	5	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Non-metallic mineral products industries	4	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Chemical and chemical products industries	3	33	62	122	11	2,584	3,671	871	50	224	881
Miscellaneous manufacturing industries	3	7	13	17	2	23	71	51	10	28	55
Totals, Prince Edward Island	**138**	**1,730**	**3,517**	**5,727**	**977**	**34,162**	**51,657**	**16,569**	**2,255**	**8,219**	**17,534**
Nova Scotia											
Food and beverage industries	288	8,051	16,587	25,333	4,061	138,498	216,119	73,004	11,028	40,230	78,957
Tobacco products industries	...	...	...	...	...	...	...	...	[1]	[1]	—
Leather industries	2	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Textile industries	11	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Knitting mills	7	1,123	2,205	3,037	160	7,969	14,815	6,966	1,277	3,819	7,038
Clothing industries	6	163	322	348	13	793	1,528	677	180	442	682
Wood industries	208	2,069	4,588	6,472	780	11,437	26,076	14,057	2,293	7,742	14,523
Furniture and fixture industries	40	343	692	947	69	1,661	3,363	1,634	392	1,380	1,648
Paper and allied industries	12	1,982	4,241	11,205	4,472	38,089	77,313	34,233	2,708	16,778	34,533
Printing, publishing and allied industries	68	761	1,585	3,649	179	3,640	16,816	12,958	1,343	6,692	13,098
Primary metal industries	5	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Metal fabricating industries (except machinery and transportation equipment industries)	53	1,112	2,365	5,678	401	12,068	22,126	9,237	1,494	7,943	11,568
Machinery industries (except electrical machinery)..	5	155	301	520	18	650	1,410	780	319	1,741	792
Transportation equipment industries	61	3,504	7,239	18,379	1,089	41,697	78,140	35,313	4,453	24,311	35,225
Electrical products industries	5	1,227	2,592	3,804	149	10,678	18,600	7,329	1,609	6,439	7,233
Non-metallic mineral products industries	33	698	1,505	3,054	1,295	5,991	16,305	9,297	987	4,594	9,341
Petroleum and coal products industries	2	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Chemical and chemical products industries	11	84	187	370	233	2,498	6,421	3,695	201	1,059	3,953
Miscellaneous manufacturing industries	35	215	468	855	82	1,116	3,479	2,300	291	1,294	2,634
Totals, Nova Scotia	**852**	**25,187**	**52,198**	**103,254**	**16,590**	**385,378**	**663,335**	**261,044**	**32,894**	**148,811**	**272,288**
New Brunswick											
Food and beverage industries	221	6,248	12,871	20,284	3,447	125,065	203,564	76,097	8,821	33,168	80,416
Tobacco products industries	...	...	...	...	...	...	...	...	[1]	[1]	—
Rubber industries	...	...	...	...	...	...	...	...	43	249	—
Leather industries	4	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Textile industries	8	323	705	982	119	1,823	3,880	2,014	396	1,258	2,022
Knitting mills	1	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Clothing industries	5	267	636	746	14	345	1,308	948	285	838	969
Wood industries	144	2,869	6,251	9,792	1,223	27,607	46,949	19,737	3,276	11,842	20,584
Furniture and fixture industries	21	153	300	476	31	1,218	2,321	1,102	179	630	1,111
Paper and allied industries	18	4,289	9,696	28,704	15,007	94,656	168,624	57,433	5,208	36,090	58,924
Printing, publishing and allied industries	46	553	1,202	2,779	131	2,764	11,381	8,486	969	4,985	8,462
Primary metal industries	6	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Metal fabricating industries (except machinery and transportation equipment industries)	36	969	2,068	4,293	289	11,777	22,274	10,189	1,303	6,343	11,166
Machinery industries (except electrical machinery)..	6	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]

[1] Confidential.

10.—Summary Statistics of Manufactures, by Province and Industry Group, 1968—continued

Province and Industry Group	Establishments	Manufacturing Activity							Total Activity		
		Production and Related Workers			Cost of Fuel and Electricity	Cost of Materials and Supplies Used	Value of Shipments of Goods of Own Manufacture	Value Added	Total Employees		Total Value Added
		Number	Man-Hours Paid	Wages					Number	Salaries and Wages	
	No.		'000	$'000	$'000	$'000	$'000	$'000		$'000	$'000
New Brunswick—concluded											
Transportation equipment industries	14	1,648	3,471	8,883	208	23,584	38,803	14,918	2,222	12,907	14,960
Electrical products industries	5	1,843	3,857	5,575	246	15,255	28,322	14,653	2,248	8,050	14,672
Non-metallic mineral products industries	34	529	1,158	2,448	1,051	4,238	12,818	7,590	689	3,435	7,602
Petroleum and coal products industries	1	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Chemical and chemical products industries	14	274	585	1,480	1,304	12,625	18,775	6,992	371	2,229	7,033
Miscellaneous manufacturing industries	36	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Totals, New Brunswick	**620**	**21,521**	**46,103**	**93,856**	**24,461**	**374,338**	**633,577**	**240,753**	**28,139**	**133,380**	**249,012**
Quebec											
Food and beverage industries	1,887	38,237	82,664	177,636	27,926	1,354,368	2,097,973	731,478	62,073	326,459	764,719
Tobacco products industries	17	5,025	10,177	30,131	877	116,961	214,691	94,859	6,630	43,443	95,485
Rubber industries	37	4,621	10,126	21,866	2,080	60,046	135,753	75,006	6,690	36,519	77,299
Leather industries	266	13,673	27,748	47,904	956	88,736	188,408	98,862	15,931	62,478	100,377
Textile industries	433	31,618	68,019	133,245	12,104	466,213	822,728	337,527	40,499	195,592	341,005
Knitting mills	206	12,044	26,459	42,764	1,472	137,574	239,769	104,942	13,825	55,678	105,109
Clothing industries	1,539	54,717	108,812	186,696	2,558	445,575	823,715	381,273	62,081	239,826	383,586
Wood industries	1,091	17,261	39,712	67,466	7,248	180,383	330,993	145,273	20,223	86,620	148,589
Furniture and fixture industries	795	13,757	29,716	57,702	2,573	115,172	245,040	130,262	16,776	78,611	131,983
Paper and allied industries	209	31,855	70,380	207,045	72,589	600,970	1,190,747	512,531	42,480	295,553	518,692
Printing, publishing and allied industries	1,055	13,571	27,751	80,383	2,397	139,279	393,857	253,990	22,734	144,625	256,951
Primary metal industries	103	16,980	35,054	107,092	40,292	480,728	870,292	351,450	24,426	167,543	363,076
Metal fabricating industries (except machinery and transportation equipment industries)	973	26,476	57,924	149,922	7,371	326,654	703,005	371,900	35,553	220,962	388,533
Machinery industries (except electrical machinery)	118	7,385	15,943	40,834	1,764	94,184	202,956	108,066	14,491	92,529	123,968
Transportation equipment industries	156	23,251	50,795	148,472	5,596	488,671	895,366	405,829	34,660	245,429	420,404
Electrical products industries	153	19,506	42,034	109,891	4,660	323,373	644,480	324,317	35,815	220,294	397,742
Non-metallic mineral products industries	338	10,439	23,381	58,531	17,908	113,125	300,085	169,524	14,443	87,333	176,627
Petroleum and coal products industries	19	1,830	4,054	15,228	3,276	392,165	475,448	86,100	2,987	25,628	88,061
Chemical and chemical products industries	326	13,031	27,386	72,689	19,681	277,757	658,821	364,762	28,042	193,332	398,264
Miscellaneous manufacturing industries	792	15,260	32,622	61,806	3,068	139,400	308,785	167,515	20,050	96,166	175,406
Totals, Quebec	**10,513**	**370,537**	**790,757**	**1,817,303**	**236,395**	**6,341,337**	**11,742,911**	**5,215,464**	**520,409**	**2,914,622**	**5,455,874**

Ontario											
Food and beverage industries	2,148	52,988	113,609	268,503	40,262	1,926,685	3,118,031	1,165,291	88,096	510,186	1,226,428
Tobacco products industries	13	2,480	4,823	12,121	826	203,825	294,123	74,949	3,327	18,940	75,267
Rubber industries	53	11,306	23,644	68,543	5,630	185,858	408,667	217,811	16,972	110,752	230,423
Leather industries	195	12,009	24,715	47,440	1,818	94,503	189,489	94,156	14,221	63,094	94,830
Textile industries	388	23,415	49,324	110,072	9,795	347,951	643,101	288,310	29,237	153,530	292,506
Knitting mills	112	6,882	14,045	23,478	1,058	59,095	112,878	53,576	8,082	32,290	53,352
Clothing industries	529	20,870	41,798	74,241	1,064	145,704	298,876	155,994	24,416	98,652	157,960
Wood industries	771	15,484	33,342	68,026	5,757	160,616	314,369	149,532	18,489	89,618	152,608
Furniture and fixture industries	927	16,351	34,377	75,180	3,042	152,102	322,986	169,507	20,320	103,664	171,748
Paper and allied industries	287	33,244	71,726	207,786	49,108	612,356	1,183,685	523,540	44,384	300,925	540,010
Printing, publishing and allied industries	1,545	24,475	49,253	151,355	4,859	237,602	716,831	476,075	43,512	287,495	486,737
Primary metal industries	207	55,126	115,674	371,282	78,107	968,099	1,980,167	937,076	69,500	500,864	951,862
Metal fabricating industries (except machinery and transportation equipment industries)	2,055	58,179	123,827	339,719	20,486	853,553	1,754,412	892,972	79,268	503,432	928,495
Machinery industries (except electrical machinery)	482	31,225	66,218	196,143	8,167	554,131	1,111,141	549,190	51,812	361,231	796,294
Transportation equipment industries	358	72,038	159,357	525,574	27,809	2,885,430	4,373,780	1,489,821	96,146	745,336	1,728,234
Electrical products industries	440	50,790	106,317	266,867	12,315	808,840	1,599,689	775,268	79,292	482,341	826,182
Non-metallic mineral products industries	516	19,241	42,911	118,212	35,654	237,498	621,814	351,400	25,966	171,165	362,514
Petroleum and coal products industries	26	2,215	5,392	18,812	5,584	466,771	572,476	107,241	8,614	79,277	106,892
Chemical and chemical products industries	575	21,489	46,331	132,105	53,298	639,628	1,457,526	766,087	41,415	293,574	809,752
Miscellaneous manufacturing industries	1,305	33,970	70,947	162,564	8,208	392,709	868,577	477,092	47,703	264,809	524,314
Totals, Ontario	**12,932**	**563,777**	**1,197,631**	**3,238,023**	**372,847**	**11,932,954**	**21,942,620**	**9,714,889**	**810,772**	**5,171,178**	**10,516,406**
Manitoba											
Food and beverage industries	345	7,115	14,567	35,540	4,883	299,192	418,128	111,649	11,249	60,918	117,189
Tobacco products industries	...	...	...	...	...	...	...	...	[1]	[1]	[1]
Rubber industries	3	14	28	49	1	84	149	71	164	938	71
Leather industries	18	628	1,256	2,213	70	4,964	8,994	4,199	718	2,818	4,226
Textile industries	43	546	1,140	1,868	102	7,391	11,758	4,368	692	2,703	4,445
Knitting mills	6	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Clothing industries	126	5,581	11,332	17,576	270	45,137	79,097	33,659	6,237	21,500	33,522
Wood industries	87	917	1,991	3,838	304	7,589	15,460	7,668	1,092	5,012	8,089
Furniture and fixture industries	111	1,700	3,521	7,032	282	16,540	31,257	14,680	2,048	9,146	14,908
Paper and allied industries	24	1,415	2,953	7,388	2,057	27,341	54,540	25,312	1,841	10,285	25,485
Printing, publishing and allied industries	185	2,388	4,858	12,779	432	17,520	57,514	39,694	4,140	22,272	39,946
Primary metal industries	16	2,156	4,668	14,071	8,527	21,135	58,717	29,333	2,627	18,244	29,887
Metal fabricating industries (except machinery and transportation equipment industries)	138	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Machinery industries (except electrical machinery)	41	1,966	4,259	9,310	466	36,290	60,447	25,172	2,975	16,913	26,965
Transportation equipment industries	39	2,281	4,939	11,144	583	23,750	48,914	27,520	3,486	19,121	29,493
Electrical products industries	22	985	1,999	4,107	248	15,624	27,845	12,471	1,539	7,799	12,598
Non-metallic mineral products industries	48	1,017	2,297	5,499	2,314	14,849	39,497	22,384	1,523	8,860	23,246
Petroleum and coal products industries	6	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Chemical and chemical products industries	33	561	1,147	3,223	1,563	19,865	37,782	16,680	1,014	6,202	18,154
Miscellaneous manufacturing industries	102	875	1,751	3,697	239	4,766	13,428	8,418	1,183	5,739	11,157
Totals, Manitoba	**1,393**	**34,153**	**71,571**	**161,942**	**23,860**	**657,609**	**1,118,813**	**443,002**	**48,100**	**251,869**	**463,577**

[1] Confidential.

10.—Summary Statistics of Manufactures, by Province and Industry Group, 1968—concluded

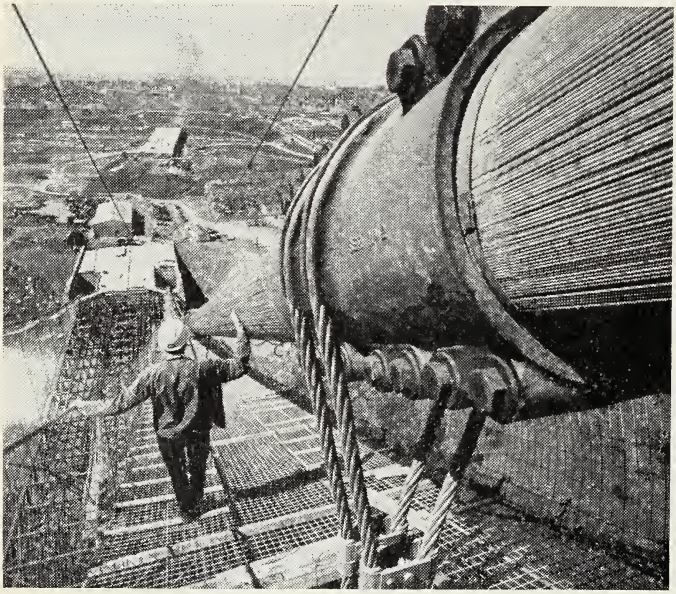
Province or Territory and Industry Group	Establishments	Manufacturing Activity							Total Activity		
		Production and Related Workers			Cost of Fuel and Electricity	Cost of Materials and Supplies Used	Value of Shipments of Goods of Own Manufacture	Value Added	Total Employees		Total Value Added
		Number	Man-Hours Paid	Wages					Number	Salaries and Wages	
	No.		'000	$'000	$'000	$'000	$'000	$'000		$'000	$'000
Saskatchewan											
Food and beverage industries	240	3,454	7,225	18,059	3,056	149,573	215,181	62,568	5,806	31,605	67,655
Tobacco products industries	—	—	—	—	—	—	—	—	—	—	—
Rubber industries	...	...	...	...	...	...	...	...	1	1	—
Textile industries	7	73	145	258	26	479	937	640	111	492	719
Clothing industries	4	1	1	1	1	1	1	1	1	1	1
Wood industries	98	873	1,823	4,157	452	12,265	22,988	10,041	1,077	5,518	10,430
Furniture and fixture industries	33	70	151	289	13	643	1,437	779	86	362	786
Paper and allied industries	7	1	1	1	1	1	1	1	1	1	1
Printing, publishing and allied industries	117	992	1,992	5,091	214	5,395	20,644	15,028	1,632	8,488	15,242
Primary metal industries	3	1	1	1	1	1	1	1	1	1	1
Metal fabricating industries (except machinery and transportation equipment industries)	76	1,043	2,172	5,677	233	12,790	25,786	12,765	1,474	8,141	14,710
Machinery industries (except electrical machinery)	31	402	838	2,004	122	4,915	11,835	7,150	787	5,223	7,381
Transportation equipment industries	9	46	94	204	17	392	863	463	208	1,646	495
Electrical products industries	4	1	1	1	1	1	1	1	1	1	1
Non-metallic mineral products industries	49	782	1,730	3,989	1,456	13,373	31,086	16,666	1,072	5,830	17,677
Petroleum and coal products industries	10	562	1,183	4,164	953	70,202	91,678	20,213	763	5,848	20,314
Chemical and chemical products industries	13	117	262	764	419	6,777	11,309	3,676	222	1,501	3,933
Miscellaneous manufacturing industries	55	254	517	1,064	69	2,060	4,513	2,427	319	1,419	2,749
Totals, Saskatchewan	**756**	**10,348**	**21,807**	**56,447**	**11,000**	**311,760**	**489,210**	**170,002**	**15,654**	**89,955**	**179,420**
Alberta											
Food and beverage industries	482	8,532	17,953	46,600	5,860	519,347	677,814	155,712	13,747	78,734	163,039
Tobacco products industries	...	...	...	...	...	...	...	...	1	1	—
Rubber industries	4	1	1	1	1	1	1	1	1	1	1
Leather industries	9	129	262	571	25	1,353	2,704	1,279	175	859	1,298
Textile industries	22	464	1,094	2,403	179	7,601	14,525	6,649	607	3,405	6,767
Knitting mills	3	1	1	1	1	1	1	1	1	1	1
Clothing industries	22	1,690	3,352	5,061	68	10,753	24,565	12,082	1,964	7,620	12,636
Wood industries	229	4,109	8,495	18,179	1,818	48,802	95,294	43,437	5,126	25,779	46,676
Furniture and fixture industries	112	971	1,946	4,104	162	8,073	17,208	9,068	1,178	5,232	9,312
Paper and allied industries	20	1,011	2,188	6,202	1,695	27,646	50,864	21,148	1,431	9,546	21,73
Printing, publishing and allied industries	225	2,016	4,129	11,641	390	14,483	51,669	36,795	3,335	19,440	36,856
Primary metal industries	22	1,976	4,226	13,224	2,939	91,235	134,363	41,025	2,860	20,299	41,689

Machinery industries (except electrical machinery)..	43	902	1,947	5,325	301	13,072	25,757	12,667	1,915	13,236	15,718
Transportation equipment industries	63	1,606	3,350	7,651	310	25,066	41,653	16,258	2,371	13,524	17,462
Electrical products industries	16	480	1,005	2,227	151	11,918	22,403	10,105	786	4,288	10,161
Non-metallic mineral products industries	103	2,650	5,860	15,236	3,695	33,717	96,337	59,551	3,514	21,205	60,439
Petroleum and coal products industries	15	739	1,575	5,772	1,979	117,939	156,296	37,137	1,064	8,713	37,566
Chemical and chemical products industries	41	1,579	3,354	10,818	5,634	43,977	113,025	65,518	2,475	17,947	66,623
Miscellaneous manufacturing industries	175	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Totals, Alberta	**1,822**	**33,962**	**71,432**	**183,747**	**26,490**	**1,041,058**	**1,667,034**	**604,529**	**49,759**	**292,983**	**629,197**
British Columbia											
Food and beverage industries	573	10,621	21,378	57,050	6,928	388,658	605,194	214,735	17,769	103,180	224,382
Tobacco products industries	...	...	...	...	...	...	...	...	[1]	[1]	—
Rubber industries	7	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Leather industries	15	223	446	868	23	1,653	3,630	1,879	270	1,223	2,038
Textile industries	50	750	1,522	2,924	167	7,689	14,498	6,358	949	4,458	6,755
Knitting mills	6	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Clothing industries	48	1,812	3,577	6,460	91	10,991	24,104	13,153	2,076	8,450	13,401
Wood industries	740	33,719	68,177	217,148	16,015	600,898	1,108,549	503,698	38,304	256,937	505,507
Furniture and fixture industries	254	1,748	3,532	8,679	351	16,686	36,427	19,607	2,212	12,018	20,217
Paper and allied industries	53	11,980	25,006	94,537	38,134	313,363	615,541	269,239	16,528	140,192	270,706
Printing, publishing and allied industries	319	3,006	5,961	20,006	701	26,025	94,175	67,498	5,756	38,036	68,054
Primary metal industries	40	5,669	11,779	39,807	6,153	103,779	231,236	120,083	7,746	57,622	122,175
Metal fabricating industries (except machinery and transportation equipment industries)	417	5,867	12,147	38,221	1,737	81,463	173,912	91,661	8,025	54,764	96,206
Machinery industries (except electrical machinery)..	67	2,107	4,369	14,386	594	29,760	62,608	32,079	3,594	26,490	33,223
Transportation equipment industries	157	3,899	8,034	25,917	689	63,147	116,638	53,398	5,409	37,884	58,189
Electrical products industries	43	1,400	2,943	7,803	351	29,671	58,909	27,433	2,649	17,185	27,511
Non-metallic mineral products industries	124	2,056	4,473	14,193	3,979	30,790	77,950	44,835	2,992	20,973	48,109
Petroleum and coal products industries	14	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Chemical and chemical products industries	103	1,595	3,409	10,291	6,721	53,644	118,000	54,792	3,091	21,031	56,502
Miscellaneous manufacturing industries	301	1,781	3,607	9,127	464	11,428	31,258	19,863	2,454	13,802	26,214
Totals, British Columbia	**3,331**	**89,268**	**182,486**	**574,288**	**86,547**	**1,910,838**	**3,550,399**	**1,575,436**	**121,490**	**826,671**	**1,615,580**
Yukon and Northwest Territories											
Food and beverage industries	5	11	24	52	15	158	387	218	27	126	262
Clothing industries	1	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Wood industries	14	38	82	222	29	133	651	503	42	236	503
Furniture and fixture industries	1	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Printing, publishing and allied industries	6	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Metal fabricating industries (except machinery and transportation equipment industries)	2	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Non-metallic mineral products industries	1	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Petroleum and coal products industries	1	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Chemical and chemical products industries	1	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Totals, Yukon and Northwest Territories	**32**	**134**	**280**	**879**	**76**	**2,367**	**4,535**	**2,130**	**179**	**1,127**	**2,569**

[1] Confidential.

Distribution by Metropolitan Area

Table **11** shows the latest annual Census of Manufactures (1966 and 1967) data for Census Metropolitan Areas for which information can be published. These exclu employees and activity of head offices, sales offices and auxiliary units which are includ in manufacturing industry totals for Canada and the provinces given in Subsection 2.



Almost every sector of C economic activity involves of steel and Canada's steel tion has doubled during t decade, outpacing the general expansion and mo markets around the worl

For Canada's largest su bridge recently built in Quet one company alone supplied miles of galvanized steel cat 600,000 structural bolts, 5,0 of steel plate and 2,150 reinforcing steel.

More than two million po stainless steel will sheath the of the 57-storey Canadian Bank of Commerce building construction in Toronto

Census Metropolitan Area and Year	Establishments	Manufacturing Activity							Total Activity		
		Production and Related Workers			Cost of Fuel and Electricity	Cost of Materials and Supplies Used	Value of Shipments of Goods of Own Manufacture	Value Added	Total Employees		Total Value Added
		Number	Man-Hours Paid	Wages					Number	Salaries and Wages	
	No.		'000	$'000	$'000	$'000	$'000	$'000		$'000	$'000
Calgary, Alta.	1966	454	8,750	18,481	43,358	5,357	263,708	416,672	155,162	12,931	67,897	160,011
	1967	477	9,560	20,014	50,897	5,736	289,874	466,492	178,154	13,801	77,784	182,283
Edmonton, Alta.	1966	541	13,622	28,451	63,936	9,392	356,532	585,623	223,907	19,251	98,934	234,537
	1967	560	13,724	29,191	70,843	8,817	367,763	617,735	242,583	19,550	108,507	256,892
Halifax, N.S.	1966	156	5,552	11,951	24,509	2,182	115,889	196,785	79,214	8,083	38,408	82,603
	1967	139	5,231	11,136	24,253	2,148	117,464	204,297	85,382	7,547	38,153	88,855
Hamilton, Ont.	1966	709	54,987	115,703	305,767	41,919	898,677	1,840,520	915,298	71,679	424,139	932,234
	1967	707	52,784	110,864	310,337	42,733	898,592	1,850,006	918,412	69,425	432,591	935,640
Kitchener, Ont.	1966	516	32,751	68,614	143,545	8,576	417,074	774,636	369,311	41,895	200,176	376,266
	1967	521	31,723	66,673	148,049	9,325	421,075	817,549	386,114	41,066	211,701	392,748
London, Ont.	1966	318	15,357	32,625	71,872	5,218	261,999	515,334	256,145	22,128	114,826	277,814
	1967	324	15,374	32,037	76,517	5,513	272,642	544,317	265,478	22,209	122,875	286,126
Montreal, Que.	1966	5,518	198,555	422,815	866,529	56,967	3,160,663	5,788,389	2,621,682	274,311	1,364,547	2,748,370
	1967	5,505	197,675	418,105	911,536	56,874	3,190,780	5,911,465	2,670,475	275,245	1,452,174	2,790,010
Ottawa, Ont.	1966	350	12,629	27,146	61,967	14,141	172,105	377,394	193,987	18,523	99,604	198,108
	1967	350	12,531	26,806	65,744	14,390	185,489	387,352	189,965	18,491	105,730	196,317
Quebec, Que.	1966	548	17,789	37,398	74,895	10,376	231,806	452,942	215,684	23,749	108,866	222,049
	1967	553	17,716	36,862	78,740	9,918	234,127	458,297	216,518	23,697	114,413	222,953
Regina, Sask.[1]	1966	135	2,631	5,550	13,115	1,575	92,749	139,535	46,077	4,120	21,436	48,297
	1967	137	2,637	5,588	14,191	1,675	91,353	140,863	48,604	4,160	23,166	51,382
Saint John, N.B.	1966	104	5,109	11,211	23,765	6,174	131,930	216,108	78,453	6,815	33,468	80,912
	1967	96	4,933	10,870	24,889	5,949	133,991	221,947	81,789	6,663	34,643	83,930
St. John's, Nfld.	1966	79	2,014	4,450	7,354	1,128	22,338	47,479	24,299	2,763	11,194	25,597
	1967	83	1,931	4,226	7,756	1,220	23,263	48,449	25,261	2,693	11,865	26,693
Saskatoon, Sask.[1]	1966	141	2,914	5,999	13,566	1,887	94,800	137,244	41,378	4,263	21,109	44,090
	1967	148	3,055	6,550	15,744	2,142	97,423	148,556	49,196	4,451	23,988	52,091
Toronto, Ont.	1966	5,629	204,803	436,560	1,001,141	65,959	3,932,569	7,023,248	3,115,492	293,301	1,600,346	3,404,347
	1967	5,716	206,327	436,350	1,062,215	69,791	4,045,112	7,331,159	3,241,057	297,979	1,719,872	3,581,941
Vancouver, B.C.	1966	1,859	46,798	94,212	250,907	20,867	910,701	1,598,989	688,838	63,547	360,409	713,179
	1967	1,846	45,259	92,099	259,665	21,878	918,274	1,652,358	715,292	61,766	374,625	739,711
Victoria, B.C.	1966	210	4,489	9,050	24,952	1,276	59,636	110,861	51,243	5,960	33,714	52,834
	1967	215	4,426	9,072	26,948	1,251	61,336	122,767	59,489	5,915	36,148	61,132
Windsor, Ont.	1966	398	26,662	58,308	172,849	11,622	716,286	1,214,133	500,029	35,162	243,252	543,446
	1967	402	26,422	58,295	175,197	12,259	793,454	1,417,370	607,769	34,722	243,006	654,373
Winnipeg, Man.	1966	1,027	28,252	59,217	114,642	10,105	513,093	847,538	331,539	38,939	174,236	343,082
	1967	1,022	28,611	59,989	125,123	10,065	536,405	896,528	352,108	39,635	191,222	365,298

[1] Classified as a Census Metropolitan Area commencing 1966; CMA is coextensive with city.

According to the latest estimates of employees by industry available at the time writing (August 1970), employees of the manufacturing industries in the Toronto a Montreal Metropolitan Areas accounted for 36 p.c. of the Canadian total. These two are together with Vancouver and Winnipeg Metropolitan Areas accounted for 43 p.c. of t total. The average monthly estimates for 1969 and the August 1970 preliminary estima (unadjusted for seasonal variation) were:—

Metropolitan Area	Employees in Manufacturing Industries	
	1969 Average	August 1970
Toronto	322,300	318,200
Montreal	300,500	304,900
Vancouver	70,300	69,200
Winnipeg	41,800	40,900

Subsection 4.—Size of Manufacturing Establishments Based on Employment and Shipments

Although the average size of a manufacturing establishment in terms of number employees is about 50, establishments with 200 or more employees account for about o half of all employment in the manufacturing industries. The average size of establishmer with 1,500 or more employees indicates that there are some with very much larger emplo ment than that minimum; the average size of establishments in this class-size is more th double its lower limit.

12.—Establishments and Employment in the Manufacturing Industries, by Number Employed per Establishment, 1949, 1955, 1961 and 1967

Size Group[1]	Estab-lishments	Em-ployees	Working Owners and Partners	Pro-portion of Total Em-ployment[1]	Estab-lishments	Em-ployees	Working Owners and Partners	Pro-portio of Tot Em-ployme
	1949				1955[2]			
	No.	No.		p.c.	No.	No.		p.c.
Under 5 employed	16,647	34,865		3.0	17,602	36,340		2.
5 to 14 "	9,133	75,482		6.4	9,864	81,471		6.
15 to 49 "	5,967	159,012		13.6	6,340	169,575		13.
50 to 99 "	1,905	132,069		11.3	2,082	144,411		11.
100 to 199 "	1,114	156,084		13.3	1,175	163,091		12.
200 to 499 "	694	213,130		18.2	739	227,667		17.
500 to 999 "	332	391,455		33.4	243	167,720		12.
1,000 to 1,499 "					76	91,840		7.
1,500 or more "					61	200,413		15.
Head offices	—	9,110		0.8	—	15,933		1.
Totals	**35,792**	**1,171,207**		**100.0**	**38,182**	**1,298,461**		**100.**

For footnotes, see end of table.

2.—Establishments and Employment in the Manufacturing Industries, by Number Employed per Establishment, 1949, 1955, 1961 and 1967—concluded

Size Group[1]	Establishments	Employees	Working Owners and Partners	Proportion of Total Employment[1]	Establishments	Employees	Working Owners and Partners	Proportion of Total Employment[1]
	1961				1967			
	No.	No.	No.	p.c.	No.	No.	No.	p.c.
r 5 employed.....	12,352	16,846	10,675	2.0	10,955	15,612	9,227	0.9
to 14 "	9,134	71,207	5,150	5.6	9,006	72,155	3,481	4.4
to 49 "	6,829	184,550	1,055	13.6	7,416	201,486	591	12.2
to 99 "	2,445	169,319	88	12.4	2,686	188,094	49	11.4
to 199 "	1,377	190,540	17	13.9	1,681	235,875	20	14.3
to 499 "	869	261,628	4	19.1	1,064	323,385	9	19.6
to 999 "	243	169,392	—	12.3	303	207,710	—	12.6
to 1,499 "	55	68,743	—	5.0	84	101,688	—	6.2
or more "	53	165,577	—	12.1	72	232,535	—	14.1
offices[3].....	—	54,733	—	4.0	—	74,287	—	4.5
Totals.....	**33,357**	**1,352,535**	**16,989**	**100.0**	**33,267**	**1,652,827**	**13,377**	**100.0**

[1] Includes working owners and partners. [2] Newfoundland included from 1955. [3] Not comparable years prior to 1961 when coverage of head offices was incomplete.

—Establishments in the Manufacturing Industries classified by Number Employed and by Province, 1967

vince or Territory	Number Employed									
	Under 5	5 to 14	15 to 49	50 to 99	100 to 199	200 to 499	500 to 999	1,000 to 1,499	1,500 or Over	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
oundland.....	101	54	57	25	.....24.....		—	.....2.....		263
e Edward Island....	75	33	27	5	.....5.....		—	—	—	145
Scotia.....	321	259	203	63	25	24	.....9.....			904
Brunswick.....	246	177	144	53	30	.....26.....				676
ec.....	3,573	2,832	2,457	903	530	328	102	25	22	10,772
io.....	3,828	3,465	3,043	1,177	783	542	152	44	42	13,076
oba.....	524	392	296	117	74	32	.....9.....		—	1,444
tchewan.....	315	254	146	35	21	.....8.....		—	—	779
ta.....	670	572	349	105	68	31	.....8.....		—	1,803
h Columbia, Yukon ritory and North- t Territories.....	1,302	968	694	203	130	75	21	8	4	3,405
anada.....	**10,955**	**9,006**	**7,416**	**2,686**	**1,681**	**1,064**	**303**	**84**	**72**	**33,267**

14.—Percentage of Manufacturing Establishments Accounted for by Employment Size Groups, 1967

Province or Region	Establishments with Total Employed of—						Al Siz Grou
	Under 5	5 to 14	15 to 49	50 to 99	100 to 199	200 or Over	
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c
Atlantic Provinces	37.4	26.3	21.7	7.3	3.8	3.5	100
Quebec	33.2	26.3	22.8	8.4	4.9	4.4	100
Ontario	29.3	26.5	23.2	9.0	6.0	6.0	100
Prairie Provinces	37.5	30.3	19.6	6.4	4.0	2.2	100
British Columbia, Yukon Territory and Northwest Territories	38.2	28.4	20.4	6.0	3.8	3.2	100
Canada	**32.9**	**27.1**	**22.3**	**8.1**	**5.0**	**4.6**	**100**

15.—Number of Establishments in Manufacturing Industries, by Industry Group an Employment Size Group, 1967

Industry Group	Establishments with Total Employed of—									To
	Under 5	5 to 14	15 to 49	50 to 99	100 to 199	200 to 499	500 to 999	1,000 to 1,499	1,500 or Over	
Food and beverage industries	2,235	2,228	1,782		268	176	39	6	3	6
Tobacco products industries			18			9	7	—	—	
Rubber industries	15	19	20	9	12	18	8	6	—	
Leather industries	96	98	161		174		—	—	—	
Textile industries	217	261	254	102	63	65	19	5	4	
Knitting mills	46	50	109	68	40	26		—	—	
Clothing industries	961		799	315	161	75			—	2
Wood industries	1,680	1,677		368		63		5		3
Furniture and fixture industries	1,200	492	371	202		26	5	—	—	2
Paper and allied industries	132		172	101		206		13	9	
Printing, publishing and allied industries	1,554	1,099	600	167	84	44		20		3
Primary metal industries	46	69	117	107		35	23	18		
Metal fabricating industries (except machinery and transportation equipment industries)	1,143	1,204	1,004	299	178	125		3		3
Machinery industries (except electrical machinery)	281		226	96	123		20		6	
Transportation equipment industries	225	370		86		143		10	18	
Electrical products industries	69	107	173	181		117		9	11	
Non-metallic mineral products industries	745		343	92	68	31	12		—	1
Petroleum and coal products industries	9	21	20	9	18	10	4		—	
Chemical and chemical products industries			1,066			53		23		1
Miscellaneous manufacturing industries	1,237	696	521	166	88	46		10		2
All Manufacturing Industries	**10,955**	**9,006**	**7,416**	**2,686**	**1,681**	**1,064**	**303**	**84**	**72**	**33**

Size Based on Shipments

The average size of a manufacturing establishment in terms of shipments of goo of own manufacture was $1,171,000 in 1967, about two thirds greater than in 1961. Ho ever, this average size is greatly affected by the large number of very small establishmer which in fact account for only a minor share of over-all shipments. Establishments wi $1,000,000 or more shipments of goods of own manufacture in 1967 accounted for abo one establishment in six but for about $13 out of every $15 of shipments.

6.—Establishments and Shipments in the Manufacturing Industries, by Shipments per Establishment, 1961 and 1967

Value Group	Establishments	Value of Shipments of Goods of Own Manufacture	Average per Establishment	Proportion of Total Shipments	Establishments	Value of Shipments of Goods of Own Manufacture	Average per Establishment	Proportion of Total Shipments
	1961				1967			
	No.	$'000	$'000	p.c.	No.	$'000	$'000	p.c.
er $25,000	9,245	106,779	12	0.5	6,470	83,386	13	0.2
5,000 but under $ 50,000	4,677	168,079	36	0.7	4,593	167,970	37	0.4
0,000 " " 100,000	4,562	328,307	72	1.4	3,862	282,192	73	0.7
0,000 " " 200,000	4,260	610,675	143	2.6	4,290	618,025	144	1.6
0,000 " " 500,000	4,555	1,462,027	321	6.2	5,395	1,744,718	323	4.5
0,000 " " 1,000,000	2,400	1,689,457	704	7.2	3,125	2,231,101	714	5.7
0,000 " " 5,000,000	2,875	6,123,965	2,130	26.1	4,135	8,997,830	2,176	23.1
0,000 or over	783	12,949,667	16,539	55.3	1,397	24,830,168	17,774	63.7
Totals and Averages	**33,357**	**23,438,956**	**703**	**100.0**	**33,267**	**38,955,389**	**1,171**	**100.0**

-Establishments in the Manufacturing Industries classified by Value of Shipments of Goods of Own Manufacture and by Province, 1967

Province or Territory	Up to $24,999	$25,000 to $99,999	$100,000 to $499,999	$500,000 to $999,999	$1,000,000 to $4,999,999	$5,000,000 or Over	Total
	No.	No.	No.	No.	No.	No.	No.
foundland	83	58	56	26	52		263
ce Edward Island	47	35	40	11			145
a Scotia	248	242	245	65	84	20	904
Brunswick	182	168	176	63	66	21	676
bec	2,090	2,734	3,237	1,073	1,241	397	10,772
rio	2,130	3,061	3,932	1,313	1,931	709	13,076
itoba	337	366	396	134	174	37	1,444
katchewan	196	250	200	55	61	17	779
rta	360	557	518	136	168	64	1,803
ish Columbia, Yukon Territory and Northwest Territories	797	984	885	249	362	128	3,405
Canada	**6,470**	**8,455**	**9,685**	**3,125**	**4,135**	**1,397**	**33,267**

Subsection 5.—Exports of Manufactured Goods

In recent years, far-reaching changes have taken place in the character of Canada's orts of manufactured goods. This country has traditionally been known as an exporter abricated materials but in 1969, for the first time, domestic exports of end products, sisting of highly manufactured goods, exceeded those of fabricated materials. This nge and the trends leading up to it are shown in the following figures:—

Year	Domestic Exports of—		
	Fabricated Materials	*End Products*	*Total Manufactured Goods*
	$'000,000	$'000,000	$'000,000
1961	2,916.4	706.4	3,622.9
1965	3,923.5	1,606.3	5,529.8
1966	4,217.0	2,455.1	6,672.1
1967	4,417.3	3,467.4	7,884.7
1968	5,027.9	4,702.4	9,730.3
1969	5,344.9	5,811.7	11,156.6

A comparison of these figures with those in Table 5 will show that the ratio t these apparent exports bears to over-all shipments of manufacturers has been rising recent years; however, the two series are not completely comparable principally beca of problems of valuation of manufacturers' shipments of metals (explained in Section p. 796). It should also be noted that the most important single reason for the rapi rising level of exports of Canadian manufactured products in the end-product categ is the Canada–United States Agreement on Automotive Products, which went into eff in 1965.

Section 2.—Origin and Destination of Canadian Manufacturers' Shipments

Information on the types and quantities of goods which the different countries of world ship to one another constitutes one of the oldest forms of official statistics. S data have been available for centuries in Canada's parent nations—Britain and Franc and in Canada itself from colonial days. However, statistics on the flow of goods betw different parts of the same country have only recently become of widespread interest. Canada, the demand for such figures has been growing because of their relevance to t needs of many current and potential users. For instance, they have a bearing on t economic relationships that underlie the political relationships of Confederation; th are important to any intensive investigation of regional disparity in economic developme and they are raw material for the statistician in the preparation of regional econor accounts; they may offer insights into the spread of business fluctuations through t economy (even if the data are available only for a base year); and they afford part measures of markets for businessmen and for officials concerned with the establishm of new industries.

Interprovincial shipments of Canadian manufacturers have been the subject of so limited studies for particular regions and such information has sometimes been gathe in a comprehensive fashion for a particular industry or product line. For the first tim however, a complete survey of the interprovincial shipments of all but the smallest ma facturers has now been carried out, along with figures gathered on manufacturers' dir shipments to other countries.* The survey relates to manufacturers' shipments in 19 and was conducted by the Merchandising and Services Division in co-operation with t Manufacturing and Primary Industries Division of the Dominion Bureau of Statist and by the Quebec Bureau of Statistics.

Basis of the Survey

All respondents to the 1967 annual Census of Manufactures were sent a supplementa questionnaire except, as mentioned above, the very small manufacturers who, becau they account for a minor percentage of their industry's shipments, customarily recei an abbreviated census form. Estimates of the interprovincial shipments of these sm manufacturers, many of whom ship mainly to markets in the same locality or provin were included in the survey results. Thus was secured for 1967 a comprehensive statistic picture of where the products of Canadian factories went when shipped to their first des nations, subject to some qualifications or perhaps distortions arising from limitations the concepts of the survey or in the reporting capabilities of the manufacturers. It w found that, in that year, 56 p.c. of the value of all shipments had first destinations in t same province as the establishment from which they originated. About two dollars seven, or 28 p.c. of the total value, went to other first destinations in Canada and o dollar in six, or 16 p.c., went direct to other countries. The patterns naturally vary wide from one industry to another and from one province or region of origin to another, as show in Table 18.

* DBS publication, *Destination of Shipments of Manufacturers* (Catalogue No. 31-504).

18.—First Destination and Value of Shipments of Goods of Own Manufacture, by Province of Origin, 1967

Province of Origin	First Destination of Shipments						
	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba
	$'000	$'000	$'000	$'000	$'000	$'000	$'000
wfoundland	69,944	27	2,172	101	[1]	446	15
nce Edward Island	2,281	21,732	8,946	4,090	[1]	1,434	87
va Scotia	21,810	17,008	266,199	42,488	59,104	46,224	6,236
w Brunswick	10,285	9,855	34,737	242,231	49,137	71,977	4,234
ebec	89,579	27,002	145,499	147,063	5,864,769	2,098,236	180,818
tario	137,058	34,223	259,788	237,390	2,644,862	11,579,302	502,704
nitoba	3,351	580	7,345	5,642	53,104	149,165	594,766
skatchewan	529	135	5,907	3,037	20,653	22,357	24,197
berta	1,817	513	1,122	2,183	114,128	79,292	45,584
itish Columbia	4,380	1,192	8,254	4,970	63,475	121,370	50,351
Totals	**341,034**	**112,268**	**739,968**	**689,195**	**8,878,035**	**14,169,803**	**1,408,991**

Province of Origin	Saskatchewan	Alberta	British Columbia	Yukon and Northwest Territories	All Canadian Destinations	Other Countries	Total
	$'000	$'000	$'000	$'000	$'000	$'000	$'000
wfoundland	[1]	[1]	[1]	[1]	72,994	110,752	183,746
nce Edward Island	[1]	[1]	—	—	47,156	2,794	49,950
va Scotia	2,317	7,405	5,982	52	474,825	112,229	587,054
w Brunswick	1,487	2,818	[1]	[1]	430,264	134,911	565,175
ebec	112,996	200,986	281,713	4,955	9,153,616	1,658,766	10,812,382
tario	342,889	620,736	747,439	20,603	17,126,994	2,901,658	20,028,652
nitoba	77,927	66,946	33,397	290	992,513	57,839	1,050,352
skatchewan	346,743	22,012	7,261	21	452,852	17,573	470,425
berta	97,623	883,716	158,732	12,953	1,397,663	129,328	1,526,991
itish Columbia	52,919	163,092	1,512,948	5,669	1,988,620	1,141,660	3,130,280
Totals	**1,034,939**	**1,967,742**	**2,750,958**	**48,641**	**32,140,974**[2]	**6,267,510**	**38,498,484**[2]

[1] Confidential. [2] Includes the Yukon and Northwest Territories.

The proportions of over-all shipments by Ontario and Quebec manufacturers going rect to other countries, at 14.5 p.c. and 15.3 p.c., respectively, were below the national erage of 16 p.c. On the other hand, the provinces with heavier relative dependence the processing of natural resources had apparent export shares above the national erage. For instance, in Newfoundland, 60.3 p.c. of shipments were reported as going to her countries. This was the highest export share for any province and was largely a flection of the prominence of the paper and allied industries among its manufactures. itish Columbia (including the Yukon and Northwest Territories) was in second place in is respect, having 36.5 p.c. of its shipments going to other countries as a first destination. owever, the British Columbia figures are an example of the sometimes misleading effect the first-destination criterion. It is known that large amounts of lumber are sold by condary distributors in the province and that much of the lumber so sold ultimately aches markets in other countries. The result is a disappearance in British Columbia products of the wood industries which is much above anything plausible, even after king account of the preferences of British Columbians for wood construction. Even , the first-destination criterion was the only practicable one to use and, for some purposes, ovides the most relevant information. Thus, movement of the products of some in- ustries, perhaps in carload lots, to wholesaling centres for redistribution in small lots ay be meaningful for an analysis of the demand for transportation. Likewise, in seeking attract industry to produce, for example, consumer goods characteristically sold through holesalers, the location of the wholesalers rather than of the ultimate consumers might present the market from a prospective manufacturer's viewpoint.

It should be noted also that reshipments of British Columbia lumber by second distributors are an important contributing factor in causing the total shipments to ot countries from all the manufacturing industries of Canada to fall well below the level exports of Canadian manufactured goods indicated in external trade data (see pp. 793-79 An additional factor is the large shortfall in exports reported by motor vehicle manufactur from the known level of exports of motor vehicles. In this area, some reporting compa are apparently exporting through head offices or sales offices which are separate report units statistically but are not manufacturing establishments, so that their shipments other countries are not shipments of goods of own manufacture according to Census Manufactures definitions. A transfer to the books of another unit of the same company treated, however, as a shipment in the Census, with the location, in this case, in Canada.

Another large contribution to the over-all shortfall in apparent exports of all mar factured goods originates in the primary metal industries. This arises from the fact th shipments of the smelting and refining industry include large amounts of work done reporting units in the mining industry owned by the same companies as the smelters. such cases, the mining industry makes the final shipment of the metals, perhaps to oth countries, at their full sale value, while the corresponding manufacturing industry "shi ments" are only an imputed custom charge for processing the ore; the destination of t smelter's shipment can be that of a reporting unit in Canada even if the metals are exporte

The over-all manufacturing shipments totals do not agree exactly with the Cens totals published elsewhere in the Year Book because of certain adjustments, such as t exclusion of advertising revenue of publishers and repair work of some industries.

Patterns of Interregional Shipments and of Provincial Demand

The ability of manufacturers in a particular region or province to ship to anoth section of Canada or to other countries reflects a variety of influences, among which is th nature of the industries within a region. Thus, the heavy concentration of motor vehic manufacturing in Ontario predisposes shipments from this region to the most distan regions of Canada and to other countries. Also, the heavy concentration of industri machinery manufacturing industries in Ontario and Quebec means widespread shipmen to other parts of Canada, even though there is a concentration of demand for such machine within the region itself and a large proportion of the shipments will remain there. In som of the smaller provinces, the representative manufacturing industries either are orient toward the processing of natural resources for shipment to other regions or countries tend to be of a type serving local or regional markets. The processing of natural resour products can involve widespread distribution beyond a province's borders which ma offset the more localized distribution of the products of other industries in the province.

The degree to which manufacturers' domestic shipments go to Canadian first destina tions outside the borders of a province is not itself an indicator of the degree to which tha province's industries are able to penetrate markets in other parts of Canada. A larg province, in terms of the total of its over-all manufacturers' shipments, naturally has mor opportunities for internal transactions; Ontario, for example, has a large capacity to orig inate shipments and also a large demand for such shipments. In addition, shipments t other parts of Canada may be some particular percentage of the originating province' shipments but represent either a relatively high or a relatively low performance in terms o the potential offered by the external markets. This potential is influenced by the size o the external markets, their distances and their special characteristics (such as, for example possessing capital-intensive industries which constitute a demand for machinery). Thes factors interact in a highly complex manner.

Table **19** summarizes the percentage distribution of the destinations of shipments o different regions of Canada and Table **20** shows the relative penetration of the apparen market for Canadian manufactures in different regions of Canada in terms of the percentag

over-all disappearance of Canadian manufactures accounted for by various Canadian urces. The percentage distribution of sources of exports and total shipment is also own.

19.—Percentage Distribution of Shipments of Manufacturing Industries by First Destination of Shipments

Region of Origin	First Destination of Shipments							
	Atlantic Provinces	Quebec	Ontario	Prairie Provinces	British Columbia, Yukon and Northwest Territories	All Canadian Destinations	Other Countries	Total
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
antic Provinces.....	54.4	8.4	8.7	1.8	0.7	74.0	26.0	100.0
ebec.....	3.8	54.2	19.4	4.6	2.7	84.7	15.3	100.0
tario.....	3.3	13.2	57.8	7.3	3.9	85.5	14.5	100.0
irie Provinces.....	1.0	6.2	8.2	70.9	7.0	93.3	6.7	100.0
tish Columbia, Yukon and North-est Territories.....	0.6	2.0	3.9	8.5	48.6	63.6	36.5	100.0
Canada.....	**4.9**	**23.1**	**36.9**	**11.5**	**7.3**	**83.7**	**16.3**	**100.0**

20.—Sources of Supply of Canadian Manufacturers' Shipments Destined to Regions of Canada and to Other Countries, 1967

(Relative percentage participation of manufacturers of regions of Canada in apparent regional markets for Canadian manufactures)

Region of Origin	First Destination of Shipments							
	Atlantic Provinces	Quebec	Ontario	Prairie Provinces	British Columbia, Yukon and North-west Territories	All Canadian Destinations	Other Countries	All Destinations
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
antic Provinces.....	40.1	1.3	0.8	0.6	0.3	3.2	5.7	3.6
ebec.....	21.7	66.1	14.8	11.2	10.3	28.5	26.5	28.2
tario.....	35.5	29.8	81.7	33.2	27.4	53.3	46.3	52.1
irie Provinces.....	1.7	2.1	1.8	49.0	7.6	8.8	3.3	7.9
tish Columbia, Yukon and North-est Territories.....	1.0	0.7	0.9	6.0	54.4	6.2	18.2	8.2
Canada.....	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

It will be seen, for instance, that while manufacturers in the Atlantic Provinces send out the same percentage of their over-all shipments to Quebec as to Ontario, their percentage penetration of the more distant but larger Ontario market is somewhat lower. Their percentage share of apparent markets for Canadian manufacturers declines with distance from the Atlantic region.

Quebec manufacturers' shipments to the Atlantic Provinces are more than half those of Ontario manufacturers, whereas the corresponding ratio is about one to three in the Western Canada market. This is not surprising since Quebec is nearer than Ontario to the Atlantic provinces market. On the other hand, Quebec's position relative to Ontario's in the western provinces shows little decline as one progresses toward the Pacific Coast and actually rises in British Columbia. The fact that the largest manufacturing areas of both central provinces are roughly equidistant by rail from these markets is perhaps relevant but also im-

portant are the effects of specialization in Central Canada and the nature of regional d mand. Concentrated demand for farm machinery in the Prairie Provinces, for instanc favours shipments from Ontario where Canadian production of farm machinery is high concentrated; Quebec's specialization in certain non-durable goods industries contribut to its relative strength in the British Columbia market. Again, it must be remembere that imported goods are not included and that manufacturers in a particular region m use secondary distributors to one market more than to another.

It might be supposed that the manufacturers of the Prairie Provinces would not ship large a percentage of their products outside their borders as do the manufacturers of son other regions, and this is so. It might also be supposed that the Prairie Provinces' marke for their products in other regions of Canada would be less diversified than for manufacture of most other regions. This is not so, however, in the sense that shipments that do leav the Prairie Provinces to other parts of Canada are widely dispersed and relatively uncon centrated geographically; roughly equivalent dollar amounts and percentages of the region over-all shipments go to Quebec, to Ontario and to British Columbia.

A comparison of shipments of various regions to other regions, per capita of the re ceiving region, yields somewhat similar patterns to those shown in Table **20**, except tha per capita disappearance of manufactures in some regions is much higher than in other Table **21** shows the per capita disappearance in various provinces of the shipments different industry groups. It will be seen that the apparent absorption of products roughly the same in the more urbanized areas of Canada for some industries but for othe it varies sharply. Investigation of the reasons for the variations points in some instance to meaningful differences in the market, to the probable influence of secondary distributio or possibly, in some cases, to anomalies in reporting.

The manufacturing industries themselves use many products of Canadian factories such as steel, cotton yarn or machinery. Thus, provinces with highly developed manu facturing industries not related to use of local natural resources should tend to have highe per capita receipts of manufactures on an over-all basis; Table **21** shows that this is so. I addition, high per capita personal income or high levels of construction activity in a pa ticular year should favour high per capita receipts of the products of certain industr groups, which appears to be the case.

As in all the data, secondary distribution of lumber has distorted the distribution o shipments of the wood industries. The demand in the Prairie Provinces for agricultura machinery is reflected in a high per capita disappearance of products of the machinery in dustries. Manitoba's high per capita disappearance of products of the food and beverag industries and of a number of other industries undoubtedly reflects distributing activity located in Winnipeg, since the lower per capita disappearance of these industries' product in Saskatchewan would hardly reflect a proportionately lower level of consumption b Saskatchewanians. Although variation in apparent absorption per capita in the individua Atlantic Provinces also reflects the effects of secondary distribution, there is doubtless a over-all influence from lower per capita personal incomes.

When the data are examined at the level of shipments of individual industries, it ap pears that the market is more influenced by population in some cases and by personal dis posable income in others. Thus, per capita disappearance of the products of soft drin manufacturers is relatively stable across the country, except for being very high in Quebec but it varies sharply if calculated on per thousand dollars of personal income which show it to be much higher in lower income provinces. On the other hand, the disappearance o products of manufacturers of toilet preparations varies sharply per capita but is either $ or $3 per thousand dollars of personal disposable income for every province across Canada This presumably reflects the partial luxury status of the goods. An adequate analysis o demand for consumer products must, of course, go beyond such simple comparisons and use more extensive data. The full report contains a wealth of information by province and by industry.

21.—Per Capita Disappearance in Province of First Destination of Shipments of the Manufacturing Industries of Canada, 1967

(In dollars per capita of province of first destination)

Industry Group of Origin	Province of First Destination					
	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
	$	$	$	$	$	$
and beverage industries	206	301	276	268	354	367
cco products industries	11	[1]	13	[1]	31	23
per industries	11	18	12	15	24	37
her industries	8	14	9	12	21	20
le industries	11	25	26	16	103	73
ting mills	7	14	8	9	24	15
ning industries	31	[1]	[1]	44	69	56
l industries	24	18	[1]	[1]	43	45
iture and fixture industries	9	21	21	[1]	31	37
r and allied industries	20	30	32	70	92	117
ing, publishing and allied industries	14	[1]	21	19	47	62
ary metal industries	19	[1]	30	29	80	194
l fabricating industries	57	74	86	74	100	174
inery industries	21	25	26	37	42	76
sportation equipment industries	59	93	132	125	112	213
rical products industries	51	49	55	74	93	125
metallic mineral products industries	23	26	26	31	[1]	64
oleum and coal products industries	39	93	[1]	109	[1]	81
nical and chemical products industries	50	81	[1]	72	91	133
ellaneous manufacturing industries	11	21	21	22	46	72
All Manufacturing Industries	**682**	**1,030**	**978**	**1,112**	**1,513**	**1,982**

Industry Group of Origin	Province of First Destination					
	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon and Northwest Territories	Canada
	$	$	$	$	$	$
and beverage industries	336	242	324	319	440	338
cco products industries	[1]	[1]	[1]	[1]	[1]	[1]
per industries	25	18	26	22	[1]	[1]
her industries	19	9	11	12	4	17
le industries	53	15	22	29	10	65
ting mills	17	10	9	10	6	16
ning industries	65	47	46	49	22	57
l industries	[1]	42	61	121	161	52
iture and fixture industries	33	19	26	30	[1]	[1]
r and allied industries	63	22	40	68	13	85
ing, publishing and allied industries	38	20	28	35	[1]	45
ary metal industries	127	53	80	77	[1]	115
l fabricating industries	117	85	118	118	43	127
inery industries	58	70	61	48	27	56
sportation equipment industries	120	118	[1]	113	[1]	148
rical products industries	96	69	79	93	26	99
metallic mineral products industries	49	43	57	[1]	12	50
oleum and coal products industries	66	93	80	88	[1]	[1]
nical and chemical products industries	80	[1]	88	80	9	[1]
ellaneous manufacturing industries	41	21	36	37	9	49
All Manufacturing Industries	**1,463**	**1,080**	**1,321**	**1,413**	**1,092**	**1,575**

[1] Confidential.

Section 3.—Government Assistance to Manufacturing

Subsection 1.—Federal Assistance to Manufacturing*

The Department of Industry, Trade and Commerce (a merger of the former Depa ments of Industry and of Trade and Commerce Apr. 1, 1969) has responsibility for stimul ing the establishment, growth and efficiency of the manufacturing, processing and tou industries in Canada, and also for the development of export trade and external tr policies. It assists Canadian industries to initiate and take advantage of technologi advances, improve products and services, increase productivity and expand domestic a foreign markets. To achieve these goals, a wide variety of programs and services offered. At each phase of the product cycle—from research, development and des through production and marketing—the Department can assist with information a financial assistance.

Program for the Advancement of Industrial Technology (PAIT).—A progr of forgiveable loans for the development of new products and processes was initiated 1965 and in 1970 was changed to provide non-repayable cash grants for qualifying projec The objective of PAIT is to encourage industrial growth and production by providi financial assistance for the development of new or improved products and processes whi incorporate new technology and offer good opportunities for commercial exploitation domestic and international markets.

Financial assistance in the form of a grant (normally 50 p.c. of the development a preproduction cost) is available to companies incorporated in Canada for projects to carried out and exploited in Canada. Title to any invention or patent is vested in a remains the property of the company. Companies are expected to have the capabilit and facilities to undertake the development work and also to provide for the manufactu and sale of the resulting products. The program is designed to increase the techni competitiveness of Canadian industry and is also intended to help create an industr environment attractive to Canada's best-qualified scientific, technical and manager personnel.

To Mar. 31, 1970, 229 projects having a total estimated value of $72,000,000 had be assisted by the Government to the extent of approximately $37,000,000.

Industrial Research and Development Incentives Act.—This legislation, enact in March 1967 and administered by the Department of Industry, Trade and Commer provides cash grants or equivalent tax credits equal to 25 p.c. of capital expenditures corporations for scientific research and development conducted in Canada, and for t increase in current expenditures in Canada for scientific research and development ov the average of such expenditures in the preceding five years. To qualify for a grant, expe ditures must be for scientific research and development which, if successful, is likely to le to or facilitate an extension of the business of the corporation. In addition, a corporati must undertake to exploit the results of the research and development in Canada and mu normally be free to export products resulting from such research and development to countries of the world.

Automotive Program.—The Canada–United States Agreement on Automoti Products signed by the Prime Minister of Canada and the President of the United Stat on Jan. 16, 1965, provides for the removal of tariffs and other impediments to trade betwe the two countries in motor vehicles and original equipment parts. The basic objectiv of the Agreement are: creation of a broader market to permit benefits of specialization a scale; trade liberalization to enable both countries to participate in the North Americ market on a fair and equitable basis; and development of conditions in which market forc would operate to attain economic patterns of investment, production and trade.

* Prepared in the Publicity Branch, Canadian Division, Department of Industry, Trade and Commer Ottawa.

As a result of this program, Canada is now producing an increasingly larger share of total North American output of vehicles and components. Canadian exports of icles and parts and employment in this industry have increased substantially, and itional investment in new plants and expansion to existing facilities have been extensive. hough all of the objectives have not yet been fully realized, the Agreement is working l.

Machinery Program.—A machinery program was introduced on Jan. 1, 1968, with objective of increasing efficiency in Canadian industry by enabling machinery users to uire advanced capital equipment at the lowest possible cost while affording Canadian chinery producers tariff protection on what they manufacture. At the same time, nadian machinery producers are protected by a single statutory rate of duty which applies mediately when they are in a position to supply. This is particularly significant for nadian producers of custom-engineered machinery.

The program covers a broad range of machines classifiable under Tariff Item 42700-1 luding general-purpose machinery, metalworking and woodworking machinery, construc- n and materials handling equipment and various types of special industry machinery, h as pulp and paper and plastics industry machinery, and service industry equipment. e statutory rate of duty under that Tariff Item is 2½ p.c. British preferential and 15 p.c. st-favoured-nation.

The program provides that the duty otherwise payable on machines, accessories, achments, control equipment, tools and components, imported under Tariff Item 42700-1, y be remitted if such remission is in the public interest and the goods imported are not ilable from production in Canada. A Machinery and Equipment Advisory Board vises the Minister of Industry, Trade and Commerce regarding the eligibility of machinery remission of duty in accordance with the provisions of the Tariff item. The Board, in n, is assisted by the Branches of the Department concerned with individual industries, luding machinery manufacturing. Final authority for granting remission lies with the vernor in Council.

Under the program, machinery producers may also apply for remission of duty on duction parts and components included in Tariff Item 42700-1 which they cannot cure in Canada. This provision is for the purpose of stimulating Canadian machinery nufacturers to specialize their production and enable them to compete more effectively.

Building Equipment, Accessories and Materials Program (BEAM).—The AM program was established to assist in achieving greater efficiency and productivity the manufacture and use of building equipment accessories and materials, thereby lizing economic gains from the industry's domestic and foreign activities. The objec- es of the program include: establishment of a comprehensive National Construction ormation System; encouragement of modular dimensional standardization and co- ination; acceleration of the industrialization of the building process; development and ansion of export markets; promotion of uniform building regulations and standards; l encouragement of building design excellence through awards programs.

The program is being implemented and is subject to further development through the nstruction Industry Development Council and in co-operation with industry through major associations. The Council, which is responsible to the Minister of Industry, de and Commerce, is national in scope, comprised of 35 representatives of the manu- turing, design and contracting sectors of the industry as well as labour unions, universi- and government. It provides a forum for industry-government dialogue on matters of nomic and technological importance to the construction industry and a means of assist- the industry to become a modern integrated industry with a high potential for com- ing in export markets. Co-operating directly in the BEAM program are the Canadian nstruction Association, the Royal Architectural Institute of Canada, the Association of nsulting Engineers of Canada, the Specification Writers Association and the National me Builders Association.

Having established the needs and priorities for construction information in Can ways in which a comprehensive and flexible information system can be developed have b identified. An experimental system has been put into operation and user reactions being assessed. At the same time, a thesaurus of Canadian construction industry ter nology is being developed in both English and French to enable users to find terms given meanings and to resolve the ambiguity in natural language terminology. Origina the Industry Advisory Committee on Construction Information Systems advised dep mental officers on this aspect of the BEAM program. Now this group functions as a s committee of the Construction Industry Development Council.

The Department has developed a program to encourage the increased use of dim sional standardization of building components. Initially, a series of six conferences v held to acquaint policymakers within the industry with the technological and econo advantages of modular standardization. Following these conferences a continuing progr of Clinics of Modular Practice was organized, the clinics being held in all parts of Can to instruct architects, engineers, draftsmen and building supervisors on modular princi in buildings. Over 90 clinics have been held to date and more than 5,000 design pro sionals, draftsmen, contractors and manufacturers have participated. A directory Canadian Modular Building Components was published and distributed and a sec edition is being prepared in both English and French.

Further, orderly intelligent industrialization of the building process has been couraged under BEAM through technical missions, publications and conferences. this connection, a National Conference on a Systems Approach to Building was held April 1968 to inform all sectors of the industry on the development of industrialized buildi techniques, following which seven regional conferences were held in October-Novem 1969 across Canada, with leading authorities participating in the lectures and semina More than 2,500 senior representatives of the design profession and industry attend

It seems likely that the BEAM Industry Advisory Committees on Modular Coordi tion and Industrialized Building Techniques and Systems will be integrated to serve a sub-committee on systems building to the Construction Industry Development Coun

The promotion of universal use of the National Building Code is continuing. Onta is taking specific action in this regard and Nova Scotia, New Brunswick, Manitoba, S katchewan and British Columbia are considering similar action. An index of all cod standards and specifications used in the Canadian construction industry has been compil which will facilitate wider use of such standards in the industry.

Industrial Design.—The design program, under authority of the National Desi Council Act, administered by the Department of Industry, Trade and Commerce, imp ments programs to promote and expedite improvement in the products of Canadian industr The Department is also responsible for developing and carrying out programs and proje that may be appropriate to the utilization of improved industrial design.

Current design programs include: financial and technical assistance to co-operati educational institutes for the purpose of introducing design training at the technical a university levels; seminars on various facets of design for the benefit of the profession educators, business executives and the general public; awards programs for achievemen over a broad field of design endeavour; the awarding of scholarships for advanced traini in industrial design in Canada and abroad; the awarding of grants for design research a design promotion in Canada; and the provision of technical and financial assistance committees and groups dedicated to the implementation of programs to foster good desig on a national, regional or industry basis.

Extensive studies conducted in 1969 into the state of design in Canada revealed th the focus of attention should be directed to the manufacturing sector. As a result, t operation of the Design Canada Centres ceased on Mar. 31, 1970, and a program of i dustrial design assistance was introduced in 1970-71, under which financial support is give to the manufacturing industries that demonstrate their interest in developing new a

proved designs by employing qualified industrial design services. Such assistance is ailable to companies incorporated in Canada, to groups of companies organized as con- rtia, and to trade associations that can satisfy program requirements; it is concentrated relatively short-term projects of product innovation and is limited to 50 p.c. of the dustrial design operational and administrative costs, subject to the technical and com- ercial feasibility of the project.

In recognition of the outstanding contribution of Canadian business management ward the cause of good design, a National Design Council Chairman's Award for Design anagement was introduced in 1970, to be presented to the management which, in the ouncil's opinion, does the most to integrate and efficiently apply good corporate design licy. This Award is conceived in the broadest terms of a total design management ntext—from the premises to the packaging.

Defence Industry Productivity Program.—This program (combining the former dustry Modernization for Defence Exports Program and the Development Sharing ogram) is designed to enhance the technological competence of the Canadian defence dustry in its export activities by providing financial assistance to industrial firms for lected projects. Emphasis is placed on those areas of defence technology having civil port sales potential. Assistance may cover the development of products for export rposes; the acquisition of modern machine tools and other advanced manufacturing equip- ent to meet exacting military standards; and assistance with preproduction expenses to tablish manufacturing sources in Canada for export markets.

Projects initiated under this program have greatly assisted industry in developing ills on a specialized basis in fields of technology that have defence and civil applications, hich Canada is favourably situated to exploit. Costs of these projects are shared by the epartment and the Canadian firm concerned, and, in some instances, by the governments other NATO countries. Manufacturing equipment projects are selected for assistance the basis that the machinery acquired will make a significant contribution to increased oductivity. Generally this means that the machinery is the most advanced of its type, ch as numerically controlled metalworking equipment.

Automotive Adjustment Assistance Program.—This program, which remains in rce until June 30, 1971, offers opportunities to Canadian automotive parts manufacturers r expanded production, rationalization of output and reduced costs. In order to take lvantage of these opportunities, Canadian parts makers must engage in substantial re- uipment and plant expansion programs. Term loans are made available for the financing the acquisition, construction, installation and modernization of facilities or machinery d for use as working capital. To further assist automotive parts producers to become ore productive and competitive, the Adjustment Assistance Board considers applications r tariff remission on imported machinery and equipment used in the production of original uipment automotive parts, accessories and tooling, when such machinery and equipment e not available from Canadian sources in time to meet production schedules.

General Adjustment Assistance Program.—The objectives of this program, which e related to the Kennedy Round Agreements, are to enable Canadian industries to benefit much as possible from the widening markets and the increased scope for specialization d longer production runs, and to assist firms adversely affected by increased imports sulting from tariff quotas made by Canada to adapt to more competitive conditions. nder this program, the Government proposes to offer insurance on the major share of k of loss for industrial adjustment assistance loans made by private lenders. Where jury can be proved, direct loans may be made. Assistance in the form of grants may also offered to manufacturers to contribute to the costs of preparing adjustment proposals improve production, marketing and financial operations.

Ship Construction Subsidy Regulations.—Since 1967, the Department of Industry, rade and Commerce has been responsible for shipbuilding matters, including the Ship

Construction Subsidy Regulations and certain sections of the Income Tax Act and Regul tions. The industry continues to respond to the policy of national competition for gover ment shipbuilding requirements and has made active use of the subsidy program for co mercial vessels. The latter provided a subsidy rate of 25 p.c. for vessels other than fishi trawlers for the period 1966-69, after which time it is being reduced by ½ of 1 p.c. each quart until a rate of 17 p.c. is reached in 1973. For fishing vessels, the subsidy rate is 35 p. With the support of other programs, the Department has encouraged the development production of marine components and exports in this area have been increased.

Subsection 2.—Provincial Assistance to Manufacturing*

Assistance given by the respective provincial governments to manufacturing with their own territories is outlined in the following paragraphs.

Newfoundland.—The Newfoundland Government offers the following forms assistance to prospective manufacturing firms:

(1) The government offers advice and assistance to prospective industry in determining desi able plant location in the province and in the preparation of feasibility studies. Informati can be made available on the source and availability of raw materials, transportation cost labour costs and a variety of other economic data. The government will transport industr alists anywhere in the province so that they may obtain a first-hand look at potenti plant sites.

(2) Financial assistance may be provided by the government directly or through its Crow corporation, the Newfoundland Industrial Development Corporation and may take th form of loans against the securities offered by the prospective enterprise, or the acquisiti and holding of shares or other securities of any company wherever incorporated, with th right of the enterprise to buy back these shares.

(3) Buildings, where they exist, and land may be provided on very attractive terms.

(4) Based on cost-benefit analyses, the government might be willing to subsidize the co of electric power.

(5) In two special areas within the province (Stephenville and Bell Island) the Newfoundlan Government is prepared, for a period of two years after production commences, to exemp prospective firms from the province's share of the corporation income tax.

(6) In special instances and in two special areas (Stephenville and Bell Island), the Newfoun land Government is prepared to exempt prospective firms from the provincial sales ta on original machinery, equipment and material used for plant construction or expansion

(7) Development operators may be exempted from paying the provincial tax on diesel oil an gasoline used in manufacturing or processing operations.

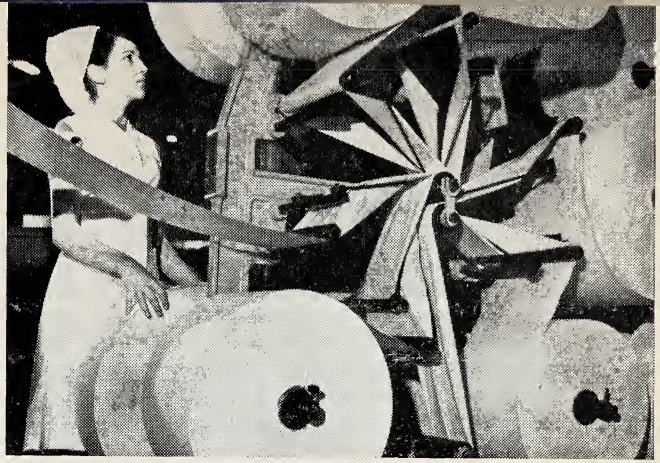
(8) Industrial training facilities are available throughout the province for specialized course to meet the requirements of incoming industry.

Prince Edward Island.—Provincial assistance to manufacturing is generally fun nelled through Industrial Enterprises Incorporated (IEI), a Crown corporation of th Prince Edward Island Government. It is prepared to offer assistance to prospectiv Island industries by way of long-term financing at attractive rates of interest. In addition IEI assists industries by acting as a clearing house for information regarding alternat sources of credit in financing through other lending institutions or outright grants that ma be available from government sources. IEI is also equipped to provide research and man agement services to existing Island industries or to groups contemplating new project on the Island.

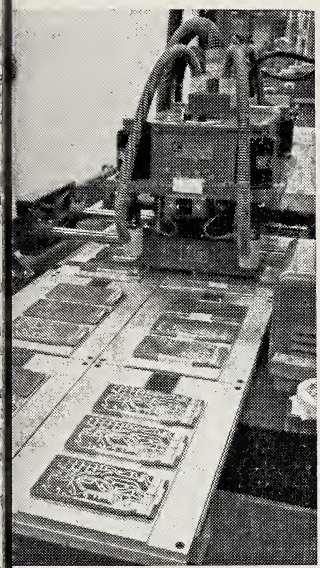
The Act incorporating IEI is particularly flexible in the terms of reference describin the manner in which IEI may participate financially in assisting industry in the province Participation is generally by way of a first mortgage on facilities but could well be in th form of an equity position. The ratio of IEI's participation to that contributed by th investors has been very generous in the past and, necessarily, will be negotiated on a individual project basis in the future.

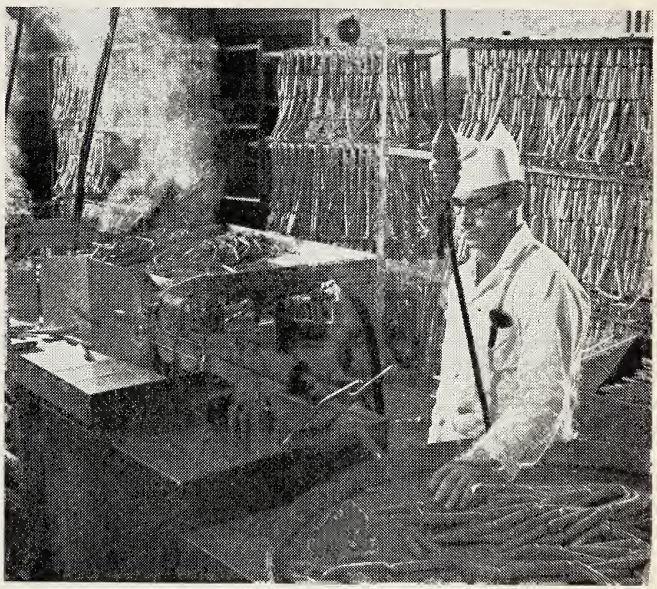
* Prepared by the provincial authorities concerned.

esting and efficient machine is used facial tissues in a paper products plant.



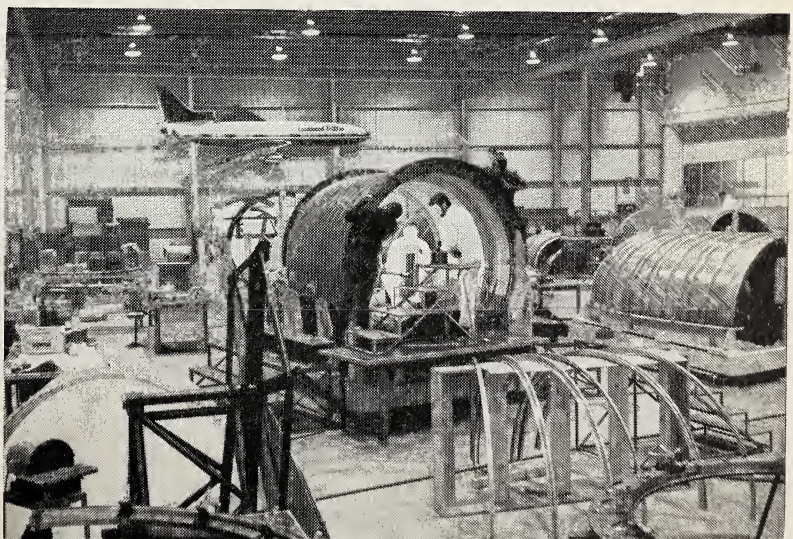
nted wiring boards in a shop out many kinds of telephone equipment.





A large meat-packing establishment produces great quantities of a very popular product.

lding a portion of will feed air into ted engine of a etliner.



Nova Scotia.—The Province of Nova Scotia offers two programs of direct financ assistance to new or expanding manufacturers.

(1) *Industrial Estates Limited* (IEL), a Crown corporation of the province formed 1957, will finance 100 p.c. of the cost of land and buildings and at least 60 p.c. of the install cost of machinery and equipment of new or expanding Nova Scotia manufacturers. T terms and conditions of financing made with clients are negotiable. IEL has made spec arrangements with most Nova Scotia municipalities whereby the local taxes paid by clients are limited to 1 p.c. of the building cost for a period of 10 years.

(2) *The Industrial Loan Board* (ILB), affiliated with the Department of Trade a Industry, provides mortgage financing for a wide range of new or expanding manufactur and processors and, in addition, financing is made available to businesses providing tour accommodation facilities. Eligible businesses may receive up to 75 p.c. of the cost of lan buildings, equipment, furnishings and other chattels taken as security. The term of lo for industrial enterprises is 15 years and for tourist and accommodation facilities, 20 yea

The special municipal tax assistance, mentioned above, is authorized under the No Scotia Bonus Act.

It should be mentioned, in addition, that the Cape Breton Development Corporatio a federal Crown agency, is responsible for fostering greater economic activity in the Ca Breton area of Nova Scotia through the promotion of industries. The program is ve flexible and the actual amount of financial assistance that will be provided to any one co pany or group will depend upon the over-all merits of the individual case. (See Index.)

New Brunswick.—The New Brunswick Department of Economic Growth has t key function of planning, directing and co-ordinating the broad strategy of economic a industrial development activities in the province. This, to a large extent, involves t provision of assistance to encourage existing industry to expand and new industry to esta lish. In order to carry out this function, the Department consists of three operati Branches.

(1) *The Industrial Finance Board* guarantees the repayment of loans by person associations or corporations engaged in industry. Applications are accepted from manu facturers only and the assistance takes the form of a guarantee of a bank loan or bon issue. Loans are to be secured by a first charge on real property, machinery and equipmen

(2) *The Industrial Services Branch* provides support services to industry through tw Divisions: the Marketing Services Division complements the work of the federal Depar ment of Industry, Trade and Commerce with a substantial external trade promotion pr gram, including trade fairs and missions, licensing arrangements and assistance in docume tation and provides local industry with export opportunities; the Engineering Service Division has the prime responsibility for implementing the government's program c maximizing New Brunswick product content in public construction and the provision c industrial engineering assistance, production control and other engineering services.

(3) *The Development Co-ordination Branch* is responsible for co-ordinating the develop ment efforts of the various provincial departments and agencies. It also acts as the pro vincial liaison unit with the federal Department of Regional Economic Expansion.

In addition, the New Brunswick Development Corporation, a Crown agency, wa established to develop existing and introduce new industry to the province. It is em powered to make loans or guarantees of loans, security being usually taken in the form of first mortgage. The Corporation must be satisfied that the funds required could not b obtained from conventional sources on reasonable terms and conditions.

A Project Branch undertakes feasibility studies required by industrial principals wish ing to establish manufacturing facilities within the province. It investigates, for example markets, resources, labour, transport, plant location, economic viability, etc., as required An Engineering Branch advises on all engineering aspects for any new developments an expansion proposals. It has also developed and administers three industrial parks, eac of which is set up as a separate company.

Another agency directed toward the economic development of the province is the New Brunswick Research and Productivity Council (see p. 494). The Council is an industrial research and development consulting organization and the source of technical information on processes, machinery, plant, etc., and industrial engineering advice and assistance to local industry. A wide selection of testing and calibration services is provided.

Quebec.—Over the years, the Quebec Government has developed a number of measures intended to give direct stimulation to industrial development in the province; these cover three of the most important aspects of industrial development—capital investment, taxation and grants. The programs under which the government may grant incentives to investment include: aid to regional industrial development; financial aid to selected industries; and financial aid to key industries.

The regional industrial development program applies to all capital investment in manufacturing outside of the industrial area of Montreal. Investment must be for the building or expansion of plant or for the purchase of machines or equipment, and it must be of the order of at least $50,000. The area eligible for grants under this program is divided into two zones. In Zone I, which is the Montreal area, the grant equals 25 p.c. of capital investment up to $500,000. In Zone II, which is the remainder of the eligible area, the grant equals 40 p.c. of the first $250,000 of investment plus 30 p.c. of the next $750,000 plus 5 p.c. of the remainder, up to a maximum of $500,000.

The financial aid to selected industries program permits grants to be made to manufacturers investing in certain industrial production equal to 15 p.c. of their investment up to a total of $500,000. This program applies to the administrative area surrounding Montreal with the exception of a zone some 20 miles wide measured from the centre of the city proper. Conditions of eligibility are based generally on the competitive capacity of the product concerned—one not manufactured in sufficient quantity in Quebec or one destined largely for export. To be eligible, a firm must export one third of the value of production resulting from assisted investment.

The financial aid to key industries program is intended to promote development in Quebec of technologically advanced industries or to promote the manufacture of new products offering some prospect of serving the international market. To be eligible for this assistance, the minimum investment must be $5,000,000. The amount of the grant is 10 p.c. of the first $10,000,000 plus 10 p.c. of the remainder; the maximum grant is $5,000,000. The program applies only to areas not covered by the federal Regional Development Grant Act. A firm benefiting under the program must undertake to spend on research in Quebec during the 10 years following the opening of the plant, an amount at least equal to the grant required. Moreover, it must agree to employ, within three years of application, graduates of Quebec universities at the rate of one graduate for every $50,000 of grant.

Over and above these investment incentive programs, the Quebec Government considers it advisable to grant manufacturing firms a reduction in taxes on profits for their investment in Quebec. Here, too, eligibility is governed by building or expansion of plants or purchase of new machinery and equipment. The taxation easement allows for a reduction in taxable revenue amounting to 30 p.c. of all investment exceeding $50,000.

The Quebec Government grants industrial credit through the Industrial Credit Board which was set up in 1967. The Board grants loans to new or existing manufacturing enterprises for the purchase of land, for the purchase or construction of buildings and for the purchase of machinery or equipment. It gives credit to small and medium-sized firms at reasonable rates if they are not able to find it elsewhere, provided they show a potential for growth and furnish adequate guarantees.

Ontario.—The Province of Ontario gives direct assistance for industrial expansion and increased trade through the Ontario Development Corporation (ODC), a Crown agency for economic and regional development which is answerable to the Legislature through the Minister of Trade and Development. The ODC program provides interest-

free forgiveable loans; term loans at reasonable rates of interest; technical and advisor services; and rental and leaseback of manufacturing plants in approved areas. Forgiveabl loans, generally representing about one third of the total capital requirement, are forgive over a six-year period as the company meets commitments. Term financing is provide through mortgages, debentures, etc., in many of Ontario's smaller centres of population Loans may run up to 20 years and are available for construction of new manufacturin buildings or the extension of existing buildings, and for purchase of new manufacturin equipment that will substantially add to employment. The Corporation may also act a a catalyst in arranging financial packages for companies, and will provide advice on ob taining financing from private lenders, government and other sources.

Equalization of Industrial Opportunity (EIO).—Under this program, started in 1967 secondary manufacturing companies establishing new facilities in provincial equalizatio areas or making approved additions to existing facilities are eligible for EIO loans. Th loans are available to companies building new plants and will also apply on new machiner when 75 p.c. of the machinery installed is new.

Northern Ontario Development.—A new Northern Ontario Development Corporation wa formed in 1970, offering loan and advisory services. This Corporation is part of a larg reorganization of services for northern Ontario.

Trade and Development.—The Trade and Industry Division of the Department o Trade and Development provides advisory services on financial and marketing matter through four Branches: the Industrial Development Branch provides market researc information, details of land and building costs, municipal services, energy and labour costs incorporation and customs laws, material sources, and transportation facilities; the Market ing Branch assists Ontario companies to export by sending trade missions abroad, b bringing in foreign buyers and through educational programs; the Research Branch pro vides economic studies for the Division and may also undertake short-term research fo industry; and the International Branch operates a trade and industry counselling servic in 14 world markets—New York, Chicago, Los Angeles, Boston, Atlanta, Cleveland Minneapolis/St. Paul, London, Frankfurt, Milan, Stockholm, Vienna, Brussels and Tokyo

The Department of Trade and Development also operates an immigration service t assist Ontario employers seeking staff.

The Sheridan Park Research Community.—The Sheridan Park Corporation has estab lished the Sheridan Park Research Community at Mississauga, which has research labora tories and facilities that offer an interchange of ideas and techniques and help participatin companies to stay competitive in world markets. Research creates new and improve products as well as better utilization of natural resources. This unique $36,000,000 com munity employs some 1,600 persons in nine resident companies and corporations.

The Ontario Economic Council.—This 20-member advisory group reports to Cabine on methods to encourage maximum development of human and material resources through out Ontario. Members of the Council are private citizens who serve without pay. (Se Index.)

Manitoba.—The Department of Industry and Commerce, established in 1948, is th focal point of provincial government effort in the drive for economic development in Mani toba. To carry forward a comprehensive range of economic development programs, th Department has established various branches and agencies, using an organizational con cept that provides industry specialization combined with comprehensive program support

The Industry Group consists of five Branches with the specific commodity interest of: Food Products; Chemicals; Machinery and Equipment; Industrial Materials an Services; and Textiles and Consumer Goods. Each is charged with the responsibility o fostering maximum economic growth in its sector, through expansion of existing firms an attraction of new investment. Each has the function of studying trends in its sector

dentifying business opportunities, and assisting firms through market research, business evelopment, trade development and casework. The Programs Group has four Branches irectly concerned with the implementation of programs in the areas of economic research, roduct development, production efficiency, manpower recruitment and regional devel- pment.

Some 50 professionals plan and carry out all programs, consulting and engineering rvices, and research activities. In addition, the Department works closely with other gencies on matters affecting Manitoba's economic development. The following three ssociated agencies are special-purpose bodies of private citizens supported by Department aff.

The *Manitoba Export Corporation* assists Manitoba firms in developing export sales. works closely with each industry Branch and is empowered to appoint agents abroad d to handle exports for Manitoba manufacturers. Services include extensive practical dvice on pricing documentation, export procedures and tariffs. The Corporation can ssume all the duties of an export department for Manitoba companies. The *Manitoba esign Institute* promotes and encourages the application of industrial design principles Manitoba companies through a series of seminars, workshops, product evaluation ses- ns, packaging clinics and direct assistance. The *Manitoba Research Council* promotes cilities to enhance the applied research and development capabilities of Manitoba indus- ies; provides information to industry regarding sources of financial assistance for research d development; and works with research units and reference authorities throughout the rld to assemble and present the latest in theoretical, technical and practical know-how Manitoba producers. (See also p. 496.)

The Department of Industry and Commerce has introduced two new programs to ovide assistance. The first is the establishment of Industrial Fellowships to stimulate e creation of industrial enterprises and the second is the formation of four committees help develop centres of excellence in research.

The Manitoba Development Corporation.—This is a Crown corporation established in 58 to provide financing for new and existing manufacturing and processing industries, r the tourist industry and for community development corporations in the province. In nsidering applications for financial assistance, the Corporation is influenced mainly by und business practices and the potential contribution to the economic growth of Mani- ba, including the creation of employment opportunities. Given these considerations, ans are usually extended when financing is not otherwise available on reasonable terms d conditions, provided the owner has invested a reasonable amount of capital in the siness. The terms of repayment can be tailored to suit the requirements of the in- vidual applicant.

Manitoba Regional Development Corporations.—By Manitoba legislation, enacted in 64, these essentially autonomous organizations came into being to undertake promotion a wide sphere of regional interests. They were created to promote industrial, commer- al and tourist developments in their respective areas and to respond more effectively to e changes taking place in rural areas. They represent a unique instrument in Manitoba d have proved extremely effective in meeting the challenges of regional development rough improved communication with people at the regional level. The Department of dustry and Commerce has encouraged the formation of regional development corpora- ns in Manitoba and the Manitoba Government has contributed to their operating costs. present, seven regional development corporations, encompassing all of Manitoba except etropolitan Winnipeg, have been formed.

Manitoba Incentives to Industry.—The Province of Manitoba offers an improved in- ntives program for Manitoba companies generally engaged in production/processing, stribution or specialized construction. These incentive programs are offered through

the Department of Industry and Commerce to help Manitoba firms pay for growth-plan costs in the following six areas of industrial interest.

(1) The Feasibility Studies Incentive Program has been established to share the costs incurred by eligible Manitoba companies undertaking feasibility studies to develop plans for company growth and assist in application for new grants offered by the federal Department of Regional Economic Expansion.

(2) Technical Assistance Incentives are available to aid Manitoba firms to retain private consulting and advisory services, thus permitting Manitoba companies to take advantage of modern management techniques to improve manufacturing productivity, product acceptance and organizational control and efficiency.

(3) Design Improvement Incentives are available to aid Manitoba firms to retain private consulting and advisory services. The purpose is to assist Manitoba companies with the improvement of market acceptance and competitiveness of existing products, with the creation of profitable new products and generally to improve their competitive position in national and international markets.

(4) The Research and Development Incentives Program enables eligible Manitoba companies to obtain assistance for product innovation and testing. The objective is to encourage the introduction of new products or a radical improvement of existing products, through research and development.

(5) The Exports Incentives Program assists eligible Manitoba companies seeking new export markets by participating in defraying the costs incurred in approved advertising, sales promotion or merchandising in new export markets.

(6) The Manpower Development Incentives Program assists Manitoba companies in the establishment of effective manpower development and training programs for employees, through a sharing of costs incurred for the professional advice necessary to set up such programs.

Saskatchewan.—Assistance to industry in Saskatchewan is given through the Department of Industry and Commerce, the main functions of which are to provide co-ordination for resource industries with all locational factors and problems connected with major resource development; to identify and promote secondary industrial opportunities and provide service to local secondary industry; to promote domestic and export marketing of products produced in Saskatchewan; and to stimulate, co-ordinate and promote the development of tourism in the province. The Department also assists industry by sponsoring or supporting trade shows, industrial seminars and displays of Saskatchewan products at provincial, national and international fairs and exhibitions.

The Industry Incentives Act.—In March 1970, the Saskatchewan Legislature passed the Industry Incentives Act, the purpose of which is to encourage the establishment, expansion and modernization of industry in certain areas of the province. The Act, which is administered by the Department of Industry and Commerce, provides forgiveable loans amounting to either $5,000 for each job created in the operation of the new or expanded facility, 20 p.c. of the capital cost of establishing, expanding or modernizing the facility, or $300,000, whichever amount is the least. One tenth of the loan will be forgiven each year until the end of the fifth year, when the balance will be forgiven provided the company has performed satisfactorily. Provincial loans will not be made in those areas eligible to receive Federal Government incentive grants.

The Saskatchewan Economic Development Corporation (Sedco).—Assistance to industry is also given by the Saskatchewan Government through the loan program of Sedco, a Crown agency established in 1963. Assistance is intended for primary or secondary manufactures, including certain specialized agricultural businesses. Enterprises may be of any size, they may be local, provincial, national or foreign organizations and ownership may take any form. An industrial enterprise is defined as an industry engaged wholly in extracting or processing natural or mineral resources, but not basic farming operations; a secondary manufacturing industry or one engaged in processing agricultural products; and an industry serving the former or one of service to agriculture. A specialized agricultural operation is one whose investment is centred in fixed assets other than land, such

in machinery, equipment and buildings. Loans are normally mortgage loans secured a pledge of the fixed assets of the borrower, repayable for a specific term but, in appro- ate circumstances, other forms of financing may be arranged.

In addition to loans, Sedco can provide or arrange to provide industrial sites, buildings plants on lease, lease-purchase arrangements or by outright sale.

Alberta.—The Province of Alberta assists industry through the services of the Alberta mmercial Corporation, a Crown corporation established in 1964. As a means of further ngthening the industrial base in the province, a program of financial assistance is offered new incoming manufacturers as well as to the expansion programs of existing Alberta cerns, and financial assistance is provided in various forms to industries unable to ain suitable financing through other sources.

The assistance is intended primarily for small manufacturers and producers and vides the financing of inventories of raw and/or finished materials, the financing or re- ncing of plant equipment, the financing of plant-sites including land and buildings, , at present on an experimental basis, the provision of leased premises under sub-lease.

Under the banner "Assistance to Industry", the service operates on an assist basis. e company and its principals are expected to lay the financial foundations and the erta Commercial Corporation then fills requirements not provided for by the banks or er lending institutions. Inventory financing is usually limited to about 75 p.c. of costs; loans covering equipment or plant-sites, the level is set to suit the purpose and usually s to about 60 p.c. Inventory financing lends itself to the broadest application among nufacturers and producers, since most of such industries face inventory problems and, en these are solved, operating capital problems usually disappear. Hence the service vides an alternative to the facilities of other lending institutions. In these specific as, the Corporation is unique in Alberta.

Under inventory financing contracts, the Corporation actually purchases and stores entory for resale to the Alberta industries being served and all benefits, such as savings ough bulk buying, etc., go to the industries. Equipment and building finance contracts designed to suit the needs and future planning of the operating company and the periods r which these contracts extend vary in accordance with their respective needs. Repay- nt is made against a blended schedule of monthly payments allowing the company to get ahead accordingly.

Service under the program is provided through the Corporation's head office in Ed- nton and its southern area office in Calgary. Financing programs are individually lt with through an experienced staff of professional personnel. Applications for as- ance call for suitable back-up material, such as financial statements, etc., which is died and broadly assessed. Applications are considered for approval by the Board of ectors and, under normal circumstances, funds are scheduled to flow in four to six ks. All funds employed under the various schemes call for interest at a favourable e and security is in the form of clear first charges with suitable involvement of the prin- als and the prudent stabilizing of the company's economic structure for the period of the dertaking.

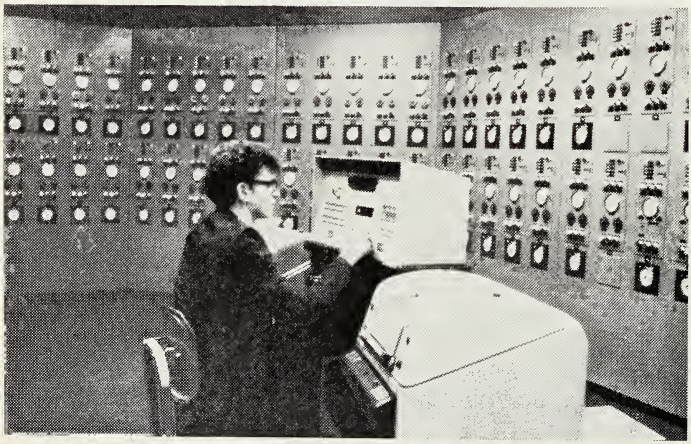
A further and often equally or even more important function of the Corporation is t of providing guidance to small manufacturers and producers in management prob- s. Such assistance is usually applied, without cost, with the object of helping the nufacturers lay down strong procedural foundations upon which to build and better ract suitable financing as a result. These operations are directed toward the regular fessional counselling services at the earliest suitable moment and as soon as their budg- allow.

The services of the Corporation are continuously examined and updated as a means keeping all aspects of the program fully abreast of the changing needs of industry.

British Columbia.—The functions of the Department of Industrial Developmer Trade, and Commerce are to encourage industry, to extend foreign trade, to investiga matters of economic importance, to collect and publish statistical information, and assist in regional industrial development. In these fields, the Department is organiz to assist existing activities and encourage new enterprises by placing its facilities at th disposal, and to co-operate in all problems incidental to establishment. Direct financ assistance is not provided for manufacturers except for the provision of bounties for t production of blister copper or refined copper (not yet exercised) and a bounty for pig ir of British Columbia origin used for steel-making purposes in the province.

The chief means employed by the British Columbia Government to promote industri development are: (1) to develop the basic provincial infrastructure, including the extensi of rail services to northern centres by the provincially owned Pacific Great Eastern Ra way, and to develop electric power facilities by the British Columbia Hydro and Pow Authority; (2) to provide economic data and analysis relating to markets, production, wa costs, etc. (a function of the Economics and Statistics Branch of the Department of Indu trial Development, Trade, and Commerce); and (3) to assist in locating plant sites.

The Department maintains industrial and trade promotion offices in London, Englan and also in San Francisco and Los Angeles.



One man monitors mo than 60 varying typ of dyeing machin from the central contr room. All workers d placed as a result the new operatio were given alterna employment by t company.

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The first fully computerized dyehouse of its kind in Canada is on line in the Cowansville, Que., plant of one of the country's largest textile manufacturers. The system, built at a cost of $1,800,000, controls a greater number of diversified dyeing machines than any other known dyehouse in the world.

A length of freshly dyed fabric is extracted from a dye machine in one of the few manual stages left in the dyeing operation.

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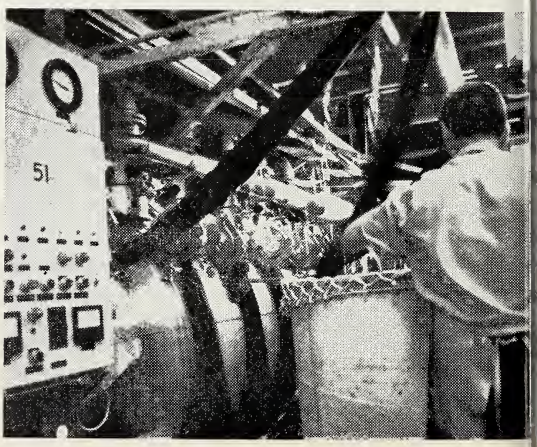

CHAPTER XVII.—CAPITAL EXPENDITURES, CONSTRUCTION AND HOUSING*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

This Chapter provides data on the capital expenditures made by all sectors of the nadian economy on construction and on machinery and equipment, together with mmaries of other available statistics for the construction industry. Section 1 shows amounts spent by each of the various industrial or economic sectors. Section 2 brings ether a number of summaries of related series on construction activity—value of work formed by type of structure, value of materials used, salaries and wages paid, numbers ployed, and building permits issued. Government aid to house-building, construction dwelling units and housing statistics of the 1966 Census are covered in Section 3.

Section 1.—Capital Expenditures on Construction and on Machinery and Equipment†

A survey carried out early in 1970 indicated that capital expenditures in Canada by iness establishments, institutions, governments and house-builders are expected to ch $17,865,000,000 during that year. This total represents an increase of about 7 p.c. r the $16,612,000,000 estimated for 1969. Within the total, outlays for new construc- n are expected to rise by some 7 p.c. and those for new machinery and equipment by htly more than 8 p.c. above the comparable 1969 expenditures.

The capital program planned for 1970, if accomplished, would match the estimated ease in investment spending for 1969 and would represent a rising level of activity in

* Except where otherwise noted, prepared (June 1970) in the Business Finance Division, Dominion Bureau tatistics.

† Capital expenditure figures for 1968 and earlier years are final and those for 1969 are preliminary and subject to ion at a later date. Capital expenditures for 1968 and 1969, as well as intentions for 1970, appear in greater detail e publication *Private and Public Investment in Canada, Outlook 1970*, available from Information Canada (Catalogue 61-205).

volume terms. These increases follow two years of marginal increase in value terms and decline in the physical volume of investment activity if allowance is made for price increases during the two years. The rate of increase expected in 1970 is similar to the average experienced over the past decade and will provide moderate growth impetus to the economy without placing generally excessive demands on investment supporting activities.

With the exception of housing, planned capital spending for 1970 for all other major sectors of the economy is expected to be higher than the 1969 level. Spending plans of business involve an increase of 11 p.c. and social capital outlays by institutions and governments are expected to rise by 10 p.c. House-building activity, on the other hand, is expected to decline by 5 p.c. following a record year in 1969.

The pattern of investment expenditures expected in 1970 differs considerably from that experienced in 1969. In the latter year, the most buoyant area of investment was house-building which recorded an increase of 20 p.c. Business investment advanced by about 7 p.c. following declines in the previous two years, and capital outlays by governments and institutions were slightly lower than in 1968. Results of the 1970 survey indicate that planned spending for new construction will rise by about 7 p.c. in 1970, with a 5-p.c. decline in residential construction more than offset by a 13-p.c. rise in non-residential construction. Outlays for the acquisition of new machinery and equipment are expected to be 8 p.c. above those of 1969.

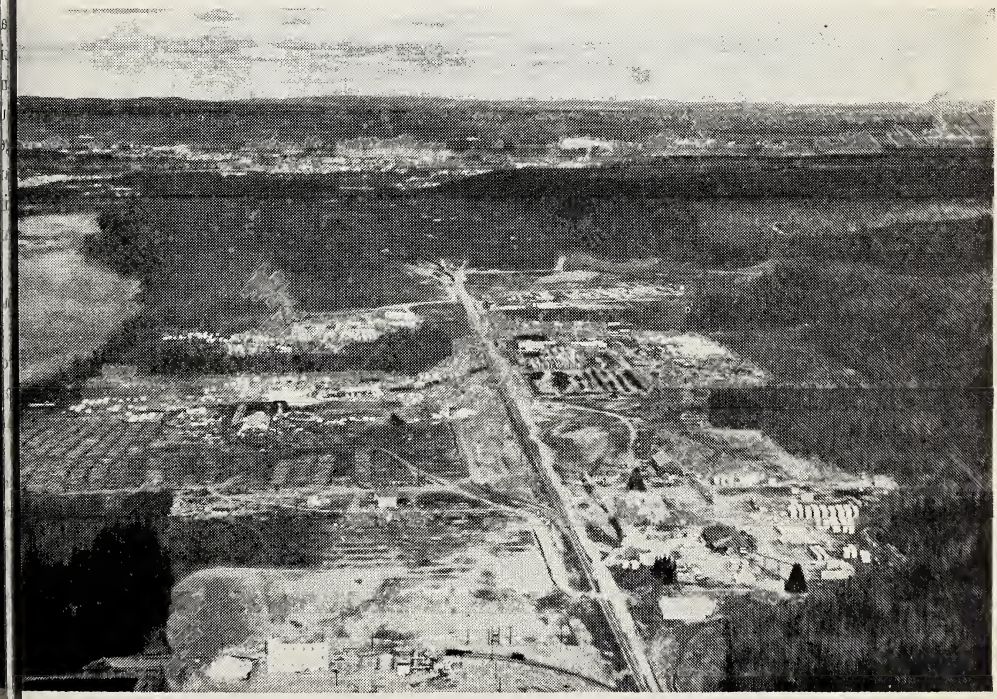
The breakdown of capital spending plans for 1970 by region reveals that capital outlays may be above the 1969 level by about 6 p.c. in the Atlantic region, Quebec and British Columbia and by 14 p.c. in Ontario. Outlays in the Prairie region, however, are not expected to exceed those of 1969. Considerable variations exist among the individual provinces of the Atlantic and Prairie regions. Plans for the Atlantic Provinces suggest that there will be a decline in New Brunswick, but an increase of 16 p.c. in Newfoundland and lesser increases in Prince Edward Island and Nova Scotia. Similarly in the Prairie Provinces, an increase of 4 p.c. is planned in Alberta but expenditures in Saskatchewan and Manitoba are expected to decline moderately.

The spending sectors that contribute to the expected strengths and weaknesses vary considerably from region to region. Business investment is expected to increase in all regions except the Prairie Provinces, where a moderate decline may occur. The most rapid growth is expected in Ontario where plans by business show an increase of more than 26 p.c., largely attributable to higher spending on commodity-producing plants, stores and commercial buildings. Business spending is expected to rise in the Atlantic Provinces by 8 p.c., in Quebec by 6 p.c. and in British Columbia by 7 p.c. In the Atlantic Provinces the main area of strength is in primary industry construction and a significant increase is also expected in spending on electric power facilities in Newfoundland and on manufacturing in Nova Scotia. In Quebec, a moderately higher level of spending is expected in most major sectors. In British Columbia, the most important contributor to the added strength is an expanded program in utilities but, with the exception of commercial building, all other major sectors show moderate gains. In the Prairie Provinces, business investment as a whole is likely to be below the level of 1969 with the only major elements of strength occurring in oil and gas developments and manufacturing in Alberta. House-building is likely to decline in Quebec, Ontario and the Prairie Provinces but modest increases are recorded for the Atlantic Provinces and British Columbia.

Social capital outlays are expected to increase in all regions in 1970. The largest crease of 12 p.c. is expected in the Prairie Provinces, followed by increases of about 11 p.c. British Columbia and of about 10 p.c. in Quebec; moderate advances are also expected r the Atlantic Provinces and Ontario.

It should be noted that, in the smaller provinces in particular, individual projects or ecial conditions in one industry may have an important bearing on the year-to-year trend total investment. For example, a decline in planned outlays by the New Brunswick per industry, where some large projects reached the completion stage, accounts for most the reduction in that province. On the other hand, the marked increase expected in ewfoundland is largely the result of an expanded program for electric power facilities. should also be noted that actual outlays in 1970 may differ from the stated intentions as result of developments occurring as the year progresses.

Table **1** shows the trend in capital spending over the years 1952-70 in both current and nstant (1961) dollars. Table **2** gives a summary of capital and repair expenditures by onomic sector for 1968-70 and Table **3** contains details of the manufacturing, mining, ilities, trade, institutions, finance and commercial services sectors.



nce George Industrial Park, one of several being developed along the Pacific Great Eastern Railway British Columbia. The 65 plants completed or in the planning stage in this area will generate rail traffic d the establishment of warehouse and service industries for customer use. Other industrial parks are under construction at Williams Lake, Mackenzie and Fort Nelson.

1.—Capital Expenditures on Construction and on Machinery and Equipment, in Current and Constant (1961) Dollars, 1952-70

NOTE.—Actual expenditures 1952-68; preliminary actual 1969; intentions 1970.

Year	Capital Expenditures						Capital Expenditures as Percentage of Gross National Expenditures	
	Construction		Machinery and Equipment		Totals			
	Current Dollars	Constant 1961 Dollars	Current Dollars	Constant 1961 Dollars	Current Dollars	Constant 1961 Dollars	Current Dollars	Constant 1961 Dollars
	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000	p.c.	p.c.
1952	3,367	3,530	2,057	2,543	5,424	6,073	22.6	22.2
1953	3,748	3,981	2,220	2,701	5,968	6,682	23.6	23.2
1954	3,818	4,072	1,984	2,386	5,802	6,458	23.0	22.8
1955	4,456	4,612	2,075	2,456	6,531	7,068	23.4	22.7
1956	5,435	5,360	2,761	3,079	8,196	8,439	26.1	25.0
1957	5,880	5,836	2,933	3,108	8,813	8,944	26.8	25.8
1958	5,954	5,990	2,534	2,644	8,488	8,634	24.9	24.3
1959	5,792	5,803	2,708	2,765	8,500	8,568	23.4	23.2
1960	5,519	5,452	2,809	2,829	8,328	8,281	22.0	21.8
1961	5,630	5,630	2,662	2,662	8,292	8,292	21.2	21.2
1962	5,834	5,777	2,935	2,855	8,769	8,632	20.7	20.7
1963	6,156	5,936	3,242	3,084	9,398	9,020	20.7	20.5
1964	7,032	6,617	3,948	3,636	10,980	10,253	22.1	21.8
1965	8,175	7,254	4,760	4,261	12,935	11,515	23.6	23.0
1966	9,281	7,744	5,807	5,076	15,088	12,820	24.6	23.9
1967	9,474	7,798	5,874	5,170	15,348	12,968	23.4	23.4
1968	9,909	7,849	5,546	4,898	15,455	12,747	21.6	22.0
1969	10,672	7,927	5,940	5,119	16,612	13,046	21.3	21.4
1970	11,440	—	6,425	—	17,865	—	—	—

2.—Summary of Capital and Repair Expenditures, by Economic Sector, 1968-70

NOTE.—Actual expenditures 1968; preliminary actual 1969; intentions 1970.

(Millions of dollars)

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total
Agriculture and fishing 1968	253	769	1,022	98	225	323	351	994	1,3
1969	243	747	990	95	225	320	338	972	1,3
1970	245	753	998	97	232	329	342	985	1,3
Forestry 1968	37	40	77	14	44	58	51	84	1
1969	48	51	99	16	48	64	64	99	1
1970	49	53	102	16	48	64	65	101	1
Mining, quarrying and oil wells. 1968	782	292	1,074	108	229	337	890	521	1,4
1969	786	310	1,096	126	227	353	912	537	1,4
1970	858	309	1,167	138	257	395	996	566	1,5
Manufacturing 1968	657	1,542	2,199	193	1,039	1,232	850	2,581	3,4
1969	742	1,802	2,544	196	1,065	1,261	938	2,867	3,8
1970	932	2,222	3,154	201	1,115	1,316	1,133	3,337	4,4
Utilities 1968	1,774	1,446	3,220	361	709	1,070	2,135	2,155	4,2
1969	1,845	1,508	3,353	363	763	1,126	2,208	2,271	4,4
1970	2,091	1,518	3,609	400	846	1,246	2,491	2,364	4,8
Construction industry 1968	14	240	254	6	190	196	20	430	4
1969	14	245	259	6	210	216	20	455	4
1970	15	250	265	6	210	216	21	460	4

.—Summary of Capital and Repair Expenditures, by Economic Sector, 1968-70—concluded

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total
using									
1968	2,806	—	2,806	780	—	780	3,586	—	3,586
1969	3,370	—	3,370	844	—	844	4,214	—	4,214
1970	3,200	—	3,200	865	—	865	4,065	—	4,065
ade (wholesale and retail)									
1968	199	311	510	66	79	145	265	390	655
1969	187	302	489	59	63	122	246	365	611
1970	225	299	524	55	65	120	280	364	644
nance, insurance and real estate.									
1968	399	90	489	33	12	45	432	102	534
1969	411	124	535	35	11	46	446	135	581
1970	481	118	599	38	12	50	519	130	649
mmercial services									
1968	112	361	473	27	83	110	139	444	583
1969	100	441	541	24	87	111	124	528	652
1970	129	489	618	21	94	115	150	583	733
titutional services									
1968	1,197	225	1,422	91	27	118	1,288	252	1,540
1969	1,152	203	1,355	105	28	133	1,257	231	1,488
1970	1,243	221	1,464	108	29	137	1,351	250	1,601
vernment departments									
1968	1,679	230	1,909	528	76	604	2,207	306	2,513
1969	1,774	207	1,981	478	77	555	2,252	284	2,536
1970	1,972	193	2,165	525	82	607	2,497	275	2,772
Totals									
1968	**9,909**	**5,546**	**15,455**	**2,305**	**2,713**	**5,018**	**12,214**	**8,259**	**20,473**
1969	**10,672**	**5,940**	**16,612**	**2,347**	**2,804**	**5,151**	**13,019**	**8,744**	**21,763**
1970	**11,449**	**6,425**	**17,865**	**2,470**	**2,990**	**5,460**	**13,910**	**9,415**	**23,325**

3.—Capital and Repair Expenditures for Certain Economic Sectors, 1968-70

NOTE.—Actual expenditures 1968; preliminary actual 1969; intentions 1970.

(Millions of dollars)

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total
	MANUFACTURING								
od and beverages									
1968	77.2	164.0	241.2	19.9	95.8	115.7	97.1	259.8	356.9
1969	83.9	162.0	245.9	20.5	98.4	118.9	104.4	260.4	364.8
1970	90.7	184.1	274.8	19.7	91.3	111.0	110.4	275.4	385.8
bacco products									
1968	3.8	9.2	13.0	2.5	5.2	7.7	6.3	14.4	20.7
1969	1.9	8.2	10.1	2.7	6.4	9.1	4.6	14.6	19.2
1970	1.9	10.4	12.3	2.7	6.4	9.1	4.6	16.8	21.4
bber									
1968	9.3	25.4	34.7	2.9	21.4	24.3	12.2	46.8	59.0
1969	10.7	37.9	48.6	2.3	18.8	21.1	13.0	56.7	69.7
1970	36.6	57.0	93.6	2.0	19.0	21.0	38.6	76.0	114.6
ther									
1968	2.2	5.9	8.1	1.0	5.1	6.1	3.2	11.0	14.2
1969	2.3	5.6	7.9	0.8	5.4	6.2	3.1	11.0	14.1
1970	0.4	4.3	4.7	0.9	5.4	6.3	1.3	9.7	11.0
tile									
1968	11.7	46.2	57.9	5.1	29.6	34.7	16.8	75.8	92.6
1969	16.2	50.5	66.7	5.5	31.6	37.1	21.7	82.1	103.8
1970	21.4	65.4	86.8	5.3	32.1	37.4	26.7	97.5	124.2

3.—Capital and Repair Expenditures for Certain Economic Sectors, 1968-70—continued

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total
	MANUFACTURING—concluded								
Knitting mills 1968	2.2	8.9	11.1	0.6	2.7	3.3	2.8	11.6	14.
1969	2.4	11.8	14.2	0.7	3.0	3.7	3.1	14.8	17.
1970	2.0	11.1	13.1	0.7	2.9	3.6	2.7	14.0	16.
Clothing 1968	2.4	7.6	10.0	1.0	3.9	4.9	3.4	11.5	14.
1969	3.1	7.7	10.8	1.0	3.7	4.7	4.1	11.4	15.
1970	0.5	6.6	7.1	0.9	3.7	4.6	1.4	10.3	11.
Wood 1968	18.4	52.6	71.0	9.0	56.7	65.7	27.4	109.3	136.
1969	37.7	95.2	132.9	7.9	62.8	70.7	45.6	158.0	203.
1970	38.8	90.4	129.2	7.3	61.1	68.4	46.1	151.5	197.
Furniture and fixtures 1968	8.4	10.6	19.0	2.0	4.7	6.7	10.4	15.3	25.
1969	2.4	8.7	11.1	1.8	4.4	6.2	4.2	13.1	17.
1970	7.6	11.1	18.7	1.8	4.2	6.0	9.4	15.3	24.
Paper and allied industries 1968	70.3	221.0	291.3	13.0	175.9	188.9	83.3	396.9	480.
1969	99.5	269.9	369.4	13.9	185.6	199.5	113.4	455.5	568.
1970	98.0	314.9	412.9	13.3	187.8	201.1	111.3	502.7	614.
Printing, publishing and allied industries. 1968	10.4	39.4	49.8	3.9	12.2	16.1	14.3	51.6	65.
1969	13.2	45.1	58.3	5.0	11.3	16.3	18.2	56.4	74.
1970	11.6	48.3	59.9	3.0	11.4	14.4	14.6	59.7	74.
Primary metals 1968	81.3	154.1	235.4	27.6	281.3	308.9	108.9	435.4	544.
1969	88.1	214.3	302.4	23.8	258.5	282.3	111.9	472.8	584.
1970	108.4	337.2	445.6	27.6	301.9	329.5	136.0	639.1	775.
Metal fabricating 1968	21.7	88.2	109.9	9.1	45.9	55.0	30.8	134.1	164.
1969	23.6	101.8	125.4	8.4	45.4	53.8	32.0	147.2	179.
1970	22.0	102.1	124.1	8.3	49.5	57.8	30.3	151.6	181.
Machinery 1968	11.8	37.7	49.5	4.5	17.2	21.7	16.3	54.9	71.
1969	15.1	45.3	60.4	4.8	19.2	24.0	19.9	64.5	84.
1970	20.6	60.4	81.0	5.5	20.7	26.2	26.1	81.1	107.
Transportation equipment 1968	37.6	94.6	132.2	10.5	66.3	76.8	48.1	160.9	209.
1969	37.4	143.3	180.7	12.0	73.2	85.2	49.4	216.5	265.
1970	41.4	231.2	272.6	13.5	78.9	92.4	54.9	310.1	365.
Electrical products 1968	17.1	51.9	69.0	6.8	28.1	34.9	23.9	80.0	103.
1969	22.1	64.2	86.3	6.6	33.3	39.9	28.7	97.5	126.
1970	20.0	93.0	113.0	7.0	34.3	41.3	27.0	127.3	154.
Non-metallic mineral products. 1968	19.9	66.0	85.9	7.5	73.8	81.3	27.4	139.8	167.
1969	34.4	92.9	127.3	7.8	76.6	84.4	42.2	169.5	211.
1970	44.4	98.1	142.5	7.8	77.0	84.8	52.2	175.1	227.
Petroleum and coal products. 1968	98.9	28.7	127.6	46.6	8.6	55.2	145.5	37.3	182.
1969	119.5	15.0	134.5	49.5	11.4	60.9	169.0	26.4	195.
1970	189.6	13.7	203.3	51.7	9.9	61.6	241.3	23.6	264.
Chemical and chemical products. 1968	134.1	157.8	291.9	16.0	90.0	106.0	150.1	247.8	397.
1969	111.1	111.7	222.8	17.7	98.7	116.4	128.8	210.4	339.
1970	146.8	129.1	275.9	18.9	100.4	119.3	165.7	229.5	395.
Miscellaneous 1968	18.2	37.5	55.7	3.8	14.8	18.6	22.0	52.3	74.
1969	17.9	49.8	67.7	3.5	17.1	20.6	21.4	66.9	88.
1970	29.9	50.1	80.0	3.4	17.3	20.7	33.3	67.4	100.
Capital items charged to operating expenses. 1968	—	234.6	234.6	—	—	—	—	234.6	234.
1969	—	260.6	260.6	—	—	—	—	260.6	260.
1970	—	303.3	303.3	—	—	—	—	303.3	303.
Totals, Manufacturing 1968	**656.9**	**1,541.9**	**2,198.8**	**193.3**	**1,039.2**	**1,232.5**	**850.2**	**2,581.1**	**3,431.**
1969	**742.5**	**1,801.5**	**2,544.0**	**196.2**	**1,064.8**	**1,261.0**	**938.7**	**2, 66.3**	**3,805.**
1970	**932.6**	**2,221.8**	**3,154.4**	**201.3**	**1,115.2**	**1,316.5**	**1,133.9**	**3,337.0**	**4,470.**

3.—Capital and Repair Expenditures for Certain Economic Sectors, 1968-70—continued

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total
				MINING					
al mines	1968	264.8	105.2	370.0	47.9	152.2	200.1	312.7	257.4	570.1
	1969	257.1	106.6	363.7	42.1	145.7	187.8	299.2	252.3	551.5
	1970	249.8	130.4	380.2	52.3	170.5	222.8	302.1	300.9	603.0
on mines	1968	*28.5*	*17.7*	*46.2*	*16.1*	*70.2*	*86.3*	*44.6*	*87.9*	*132.5*
	1969	*28.4*	*11.5*	*39.9*	*23.1*	*49.1*	*72.2*	*51.5*	*60.6*	*112.1*
	1970	*28.7*	*20.8*	*49.5*	*26.0*	*55.5*	*81.5*	*54.7*	*76.3*	*131.0*
ther metal mines	1968	*236.3*	*87.5*	*323.8*	*31.8*	*82.0*	*113.8*	*268.1*	*169.5*	*437.6*
	1969	*228.7*	*95.1*	*323.8*	*19.0*	*96.6*	*115.6*	*247.7*	*191.7*	*439.4*
	1970	*221.1*	*109.6*	*330.7*	*26.3*	*115.0*	*141.3*	*247.4*	*224.6*	*472.0*
roleum and gas[1]	1968	407.4	58.0	465.4	56.3	19.2	75.5	463.7	77.2	540.9
	1969	462.2	91.7	553.9	78.6	19.4	98.0	540.8	111.1	651.9
	1970	539.1	81.0	620.1	79.4	21.5	100.9	618.5	102.5	721.0
er mining[2]	1968	110.2	128.4	238.6	4.3	57.5	61.8	114.5	185.9	300.4
	1969	66.4	111.5	177.9	5.3	62.3	67.6	71.7	173.8	245.5
	1970	68.9	98.1	167.0	6.5	64.7	71.2	75.4	162.8	238.2
Totals, Mining	**1968**	**782.4**	**291.6**	**1,074.0**	**108.5**	**228.9**	**337.4**	**890.9**	**520.5**	**1,411.4**
	1969	**785.7**	**309.8**	**1,095.5**	**126.0**	**227.4**	**353.4**	**911.7**	**537.2**	**1,448.9**
	1970	**857.8**	**309.5**	**1,167.3**	**138.2**	**256.7**	**394.9**	**996.0**	**566.2**	**1,562.2**
				UTILITIES					
ctric power	1968	888.6	443.0	1,331.6	67.1	46.4	113.5	955.7	489.4	1,445.1
	1969	930.9	483.8	1,414.7	84.0	54.3	138.3	1,014.9	538.1	1,553.0
	1970	1,024.4	553.5	1,577.9	95.5	61.5	157.0	1,119.9	615.0	1,734.9
distribution	1968	87.0	30.4	117.4	8.8	4.0	12.8	95.8	34.4	130.2
	1969	91.1	26.9	118.0	9.1	3.2	12.3	100.2	30.1	130.3
	1970	77.2	25.0	102.2	9.9	3.4	13.3	87.1	28.4	115.5
lway transport	1968	146.7	115.7	262.4	148.1	234.3	382.4	294.8	350.0	644.8
	1969	169.1	131.0	300.1	153.0	251.1	404.1	322.1	382.1	704.2
	1970	192.3	136.7	329.0	166.2	278.2	444.4	358.5	414.9	773.4
an transit systems	1968	16.0	16.3	32.3	7.6	27.6	35.2	23.6	43.9	67.5
	1969	21.7	15.0	36.7	5.1	25.0	30.1	26.8	40.0	66.8
	1970	27.8	18.0	45.8	7.6	32.9	40.5	35.4	50.9	86.3
er transport and services	1968	40.4	59.8	100.2	10.7	24.4	35.1	51.1	84.2	135.3
	1969	56.9	65.6	122.5	9.2	20.6	29.8	66.1	86.2	152.3
	1970	70.1	44.4	114.5	8.7	20.4	29.1	78.8	64.8	143.6
or transport	1968	11.3	74.4	85.7	3.8	97.4	101.2	15.1	171.8	186.9
	1969	13.5	71.2	84.7	2.4	88.6	91.0	15.9	159.8	175.7
	1970	13.7	66.8	80.5	2.6	91.2	93.8	16.3	158.0	174.3
in elevators	1968	19.0	15.0	34.0	6.7	3.6	10.3	25.7	18.6	44.3
	1969	17.4	6.6	24.0	5.2	3.4	8.6	22.6	10.0	32.6
	1970	7.3	5.0	12.3	4.7	3.4	8.1	12.0	8.4	20.4
ephones, telegraph and ble systems.	1968	222.6	407.8	630.4	64.7	174.5	239.2	287.3	582.3	869.6
	1969	234.1	457.8	691.9	54.9	189.9	244.8	289.0	647.7	936.7
	1970	247.2	425.7	672.9	60.8	207.8	268.6	308.0	633.5	941.5
adcasting (excludes mmunity antenna levision).	1968	5.1	26.0	31.1	1.1	4.9	6.0	6.2	30.9	37.1
	1969	15.8	17.8	33.6	1.2	4.6	5.8	17.0	22.4	39.4
	1970	19.9	16.0	35.9	1.2	4.7	5.9	21.1	20.7	41.8

[1] Includes expenditures on facilities related to petroleum and gas wells and extraction of petroleum from shales nds, natural gas processing plants and contract drilling for petroleum and gas. [2] Includes coal mines, stos, gypsum, salt, miscellaneous non-metal (incl. potash) and quarrying.

3.—Capital and Repair Expenditures for Certain Economic Sectors, 1968-70—continued

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total
				Utilities—concluded					
Water systems 1968	91.0	4.1	95.1	25.2	2.5	27.7	116.2	6.6	122.
1969	71.5	4.6	76.1	28.0	2.6	30.6	99.5	7.2	106.
1970	111.5	7.2	118.7	29.2	2.9	32.1	140.7	10.1	150.
Other utilities[1] 1968	246.1	226.4	472.5	17.4	89.3	106.7	263.5	315.7	579.
1969	223.2	199.0	422.2	11.2	119.2	130.4	234.4	318.2	552.
1970	299.1	189.6	488.7	13.1	140.1	153.2	312.2	329.7	641.
Capital items charged to operating expenses. 1968	—	27.7	27.7	—	—	—	—	27.7	27.
1969	—	29.1	29.1	—	—	—	—	29.1	29.
1970	—	30.3	30.3	—	—	—	—	30.3	30.
Totals, Utilities 1968	**1,773.8**	**1,446.6**	**3,220.4**	**361.2**	**708.9**	**1,070.1**	**2,135.0**	**2,155.5**	**4,290.**
1969	**1,845.2**	**1,508.4**	**3,353.6**	**363.3**	**762.5**	**1,125.8**	**2,208.5**	**2,270.9**	**4,479.**
1970	**2,090.5**	**1,518.2**	**3,608.7**	**399.5**	**846.5**	**1,246.0**	**2,490.0**	**2,364.7**	**4,854.**
				Trade					
Wholesale 1968	50.3	54.0	104.3	9.8	15.7	25.5	60.1	69.7	129.
1969	47.3	55.3	102.6	7.7	14.1	21.8	55.0	69.4	124.
1970	43.5	49.5	93.0	8.6	14.3	22.9	52.1	63.8	115.
Chain stores 1968	44.4	69.2	113.6	10.4	14.6	25.0	54.8	83.8	138.
1969	34.3	71.2	105.5	9.8	9.9	19.7	44.1	81.1	125.
1970	48.3	68.5	116.8	10.0	11.3	21.3	58.3	79.8	138.
Independent stores 1968	33.0	77.2	110.2	19.2	17.7	36.9	52.2	94.9	147.
1969	26.4	58.4	84.8	15.2	10.5	25.7	41.6	68.9	110.
1970	37.6	56.9	94.5	10.5	9.1	19.6	48.1	66.0	114.
Department stores 1968	15.2	32.9	48.1	7.5	5.1	12.6	22.7	38.0	60.
1969	12.7	28.7	41.4	7.6	4.0	11.6	20.3	32.7	53.
1970	25.6	32.8	58.4	6.9	4.1	11.0	32.5	36.9	69.
Automotive trade 1968	55.6	48.7	104.3	18.6	26.1	44.7	74.2	74.8	149.
1969	66.1	61.4	127.5	18.9	24.8	43.7	85.0	86.2	171.
1970	69.6	64.2	133.8	18.8	26.6	45.4	88.4	90.8	179.
Capital items charged to operating expenses. 1968	—	29.0	29.0	—	—	—	—	29.0	29.
1969	—	27.0	27.0	—	—	—	—	27.0	27.
1970	—	27.0	27.0	—	—	—	—	27.0	27.
Totals, Trade 1968	**198.5**	**311.0**	**509.5**	**65.5**	**79.2**	**144.7**	**264.0**	**390.2**	**654.**
1969	**186.8**	**302.0**	**488.8**	**59.2**	**63.3**	**122.5**	**246.0**	**365.3**	**611.**
1970	**224.6**	**298.9**	**523.5**	**54.8**	**65.4**	**120.2**	**279.4**	**364.3**	**643.**
				Institutions					
Churches 1968	35.7	4.1	39.8	7.1	1.2	8.3	42.8	5.3	48.
1969	24.9	2.4	27.3	10.9	1.7	12.6	35.8	4.1	39.
1970	23.7	3.3	27.0	7.0	2.0	9.0	30.7	5.3	36.
Universities 1968	288.5	71.5	360.0	16.2	2.5	18.7	304.7	74.0	378.
1969	288.4	67.3	355.7	16.6	3.2	19.8	305.0	70.5	375.
1970	313.9	58.0	371.9	17.8	3.4	21.2	331.7	61.4	393.
Schools 1968	653.9	84.8	738.7	37.3	9.7	47.0	691.2	94.5	785.
1969	613.1	74.3	687.4	45.6	10.1	55.7	658.7	84.4	743.
1970	614.6	76.9	691.5	47.0	10.0	57.0	661.6	86.9	748.

[1] Includes air transport, warehousing, oil and gas pipelines, and toll highways and bridges.

3.—Capital and Repair Expenditures for Certain Economic Sectors, 1968-70—concluded

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total
					Institutions—concluded				
spitals	1968	196.4	60.8	257.2	27.4	13.4	40.8	223.8	74.2	298.0
	1969	202.8	55.9	258.7	30.2	12.0	42.2	233.0	67.9	300.9
	1970	251.0	78.8	329.8	34.9	13.1	48.0	285.9	91.9	377.8
er institutional services[1]	1968	22.3	3.6	25.9	2.6	0.7	3.3	24.9	4.3	29.2
	1969	23.1	3.1	26.2	1.9	0.6	2.5	25.0	3.7	28.7
	1970	39.3	4.4	43.7	1.6	0.6	2.2	40.9	5.0	45.9
Totals, Institutions	1968	1,196.8	224.8	1,421.6	90.6	27.5	118.1	1,287.4	252.3	1,539.7
	1969	1,152.3	203.0	1,355.3	105.2	27.6	132.8	1,257.5	230.6	1,488.1
	1970	1,242.5	221.4	1,463.9	108.3	29.1	137.4	1,350.8	250.5	1,601.3
					Finance				
ks	1968	25.7	23.4	49.1	6.8	4.4	11.2	32.5	27.8	60.3
	1969	28.9	24.4	53.3	8.2	3.3	11.5	37.1	27.7	64.8
	1970	43.5	28.9	72.4	9.9	3.5	13.4	53.4	32.4	85.8
rance, trust and loan ompanies.	1968	16.8	30.4	47.2	4.4	2.2	6.6	21.2	32.6	53.8
	1969	23.0	58.6	81.6	3.7	1.7	5.4	26.7	60.3	87.0
	1970	44.1	41.7	85.8	3.6	1.8	5.4	47.7	43.5	91.2
er finance[2]	1968	356.7	36.5	393.2	22.1	5.5	27.6	378.8	42.0	420.8
	1969	359.1	41.4	400.5	23.5	5.9	29.4	382.6	47.3	429.9
	1970	393.8	47.5	441.3	24.6	6.2	30.8	418.4	53.7	472.1
Totals, Finance	1968	399.2	90.3	489.5	33.3	12.1	45.4	432.5	102.4	534.9
	1969	411.0	124.4	535.4	35.4	10.9	46.3	446.4	135.3	581.7
	1970	481.4	118.1	599.5	38.1	11.5	49.6	519.5	129.6	649.1
					Commercial Services				
ndries and dry cleaners	1968	3.0	8.2	11.2	1.0	4.4	5.4	4.0	12.6	16.6
	1969	1.8	7.2	9.0	1.1	3.6	4.7	2.9	10.8	13.7
	1970	1.0	7.2	8.2	1.1	3.4	4.5	2.1	10.6	12.7
tion picture theatres	1968	1.0	2.7	3.7	2.8	0.7	3.5	3.8	3.4	7.2
	1969	1.4	2.1	3.5	2.2	0.7	2.9	3.6	2.8	6.4
	1970	2.7	2.6	5.3	1.6	0.7	2.3	4.3	3.3	7.6
tels	1968	37.9	15.9	53.8	14.9	6.5	21.4	52.8	22.4	75.2
	1969	40.0	15.6	55.6	14.3	7.2	21.5	54.3	22.8	77.1
	1970	56.3	14.8	71.1	13.5	8.0	21.5	69.8	22.8	92.6
ner commercial services[3]	1968	69.7	334.3	404.0	8.1	71.9	80.0	77.8	406.2	484.0
	1969	56.7	415.9	472.6	6.8	75.6	82.4	63.5	491.5	555.0
	1970	68.8	464.4	533.2	5.2	81.5	86.7	74.0	545.9	619.9
Totals, Commercial Services.	1968	111.6	361.1	472.7	26.8	83.5	110.3	138.4	444.6	583.0
	1969	99.9	440.8	540.7	24.4	87.1	111.5	124.3	527.9	652.2
	1970	128.8	489.0	617.8	21.4	93.6	115.0	150.2	582.6	732.8

[1] Includes privately operated social and welfare institutions. [2] Mainly expenditures of real estate companies engaged in developing, owning and leasing properties, and may include outlays for multi-purpose developments with such facilities as theatres, stores, hotel accommodation, etc. [3] Includes services to business, certain recreational and personal services and such miscellaneous services as trade and exhibition associations.

A summary of the capital expenditures in each province for the years 1968 to 1970 is given in Table 4. Such expenditures represent gross additions to the capital stocks of

the province and are a reflection of economic activity in the area, although the act production of these assets may generate major employment and income-giving effects other regions.

4.—Capital and Repair Expenditures, by Province, 1968-70

NOTE.—Actual expenditures 1968; preliminary actual 1969; intentions 1970.

(Millions of dollars)

Province and Year		Capital			Repair			Capital and Repair		
		Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Tot
Newfoundland	1968	266	121	387	43	82	125	309	203	
	1969	309	81	390	55	68	123	364	149	
	1970	362	90	452	61	72	133	423	162	
Prince Edward Island	1968	26	15	41	9	7	16	35	22	
	1969	28	15	43	9	7	16	37	22	
	1970	31	15	46	9	8	17	40	23	
Nova Scotia	1968	306	155	461	76	68	144	382	223	
	1969	377	136	513	70	63	133	447	199	
	1970	387	162	549	71	66	137	458	228	
New Brunswick	1968	218	112	330	56	59	115	274	171	
	1969	227	167	394	55	59	114	282	226	
	1970	246	133	379	58	62	120	304	195	
Quebec	1968	1,968	1,207	3,175	584	613	1,197	2,552	1,820	4,3
	1969	2,065	1,184	3,249	587	615	1,202	2,652	1,799	4,4
	1970	2,175	1,249	3,424	617	653	1,270	2,792	1,902	4,6
Ontario	1968	3,485	2,094	5,579	825	1,082	1,907	4,310	3,176	7,4
	1969	3,778	2,459	6,237	829	1,126	1,955	4,607	3,585	8,1
	1970	4,138	2,958	7,096	874	1,234	2,108	5,012	4,192	9,2
Manitoba	1968	549	271	820	113	119	232	662	390	1,0
	1969	623	269	892	115	133	248	738	402	1,1
	1970	605	228	833	121	134	255	726	362	1,0
Saskatchewan	1968	541	402	943	127	123	250	668	525	1,1
	1969	453	298	751	126	127	253	579	425	1,0
	1970	430	290	720	131	128	259	561	418	9
Alberta	1968	1,205	518	1,723	237	212	449	1,442	730	2,1
	1969	1,352	579	1,931	253	220	473	1,605	799	2,4
	1970	1,448	562	2,010	260	226	486	1,708	788	2,4
British Columbia, Yukon Territory and Northwest Territories.	1968	1,345	651	1,996	235	348	583	1,580	999	2,5
	1969	1,460	752	2,212	248	386	634	1,708	1,138	2,8
	1970	1,618	738	2,356	268	407	675	1,886	1,145	3,0
Canada	**1968**	**9,909**	**5,546**	**15,455**	**2,305**	**2,713**	**5,018**	**12,214**	**8,259**	**20,4**
	1969	**10,672**	**5,940**	**16,612**	**2,347**	**2,804**	**5,151**	**13,019**	**8,744**	**21,7**
	1970	**11,440**	**6,425**	**17,865**	**2,470**	**2,990**	**5,460**	**13,910**	**9,415**	**23,3**

Section 2.—Construction Statistics

Subsection 1.—Value of Construction Work Performed

Statistics of the construction industry are based largely on information received at the e time and from the same sources as the data on capital expenditures that appear in ion 1. The data represent the estimated total value of all new and repair construction ormed by contractors, by labour forces of utility, manufacturing, mining and logging s, and by government departments, home-owner builders and other persons or firms primarily engaged in the construction industry. Table 5 shows the value of new and ir construction work performed during the period 1961-69 with intentions for 1970, and le 6 shows the value of such work performed by contractors and others in the years 3-70.

5.—Value of New and Repair Construction Work Performed, 1961-70

NOTE.—Actual expenditures 1961-68; preliminary 1969; intentions 1970.

Year	New	Repair	Total	Total Construction as Percentage of Gross National Product
	$'000,000	$'000,000	$'000,000	p.c.
.....	5,518	1,456	6,974	17.8
.....	5,787	1,509	7,296	17.2
.....	6,157	1,559	7,716	17.0
.....	7,004	1,630	8,634	17.3
.....	8,114	1,754	9,868	18.0
.....	9,281	1,954	11,235	18.3
.....	9,474	2,146	11,620	17.7
.....	9,909	2,305	12,214	17.1
.....	10,672	2,350	13,022	16.6
.....	11,440	2,471	13,911	..

6.—Value of Construction Work Performed, by Contractors and Others, 1966-70

NOTE.—Actual expenditures 1966-68; preliminary 1969; intentions 1970.

(Millions of dollars)

Item	1966	1967	1968	1969	1970
ract Construction	**9,123**	**9,245**	**9,935**	**10,593**	**11,219**
New	8,062	8,075	8,675	9,261	9,856
Repair	1,061	1,170	1,260	1,332	1,363
r Construction[1]	**2,112**	**2,375**	**2,279**	**2,429**	**2,692**
New	1,219	1,399	1,234	1,411	1,584
Repair	893	976	1,045	1,018	1,108
ls, Construction	**11,235**	**11,620**	**12,214**	**13,022**	**13,911**
New	**9,281**	**9,474**	**9,909**	**10,672**	**11,440**
Repair	**1,954**	**2,146**	**2,305**	**2,350**	**2,471**

Work done by the labour forces of utilities, manufacturing, mining and logging firms, government departments, utions and other persons or firms not primarily engaged in the construction industry.

Table 7 gives estimates of total expenditures in Canada on each type of construction which information is available.

7.—Value of Construction Work Performed, by Type of Structure, 1968-70

NOTE.—Actual expenditures 1968; preliminary 1969; intentions 1970.

Type of Structure	1968			1969			1970		
	New	Repair	Total	New	Repair	Total	New	Repair	Total
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Building Construction									
Residential	2,806,423	780,334	3,586,757	3,370,000	841,000	4,211,000	3,200,000	864,600	4,064,600
Industrial	549,178	194,583	743,761	631,898	199,042	830,940	729,345	211,410	931,755
Factories, plants, workshops, food canneries	426,706	150,220	576,926	525,475	145,689	671,164	629,828	147,818	777,646
Mine and mine mill buildings	108,625	25,579	134,204	87,657	34,778	122,435	71,245	43,608	114,853
Railway stations, offices, roadway buildings	8,319	11,774	20,093	9,507	11,173	20,680	9,998	11,898	21,896
Railway shops, engine houses, water and fuel stations	5,528	7,010	12,538	9,259	7,402	16,661	9,274	8,086	17,360
Commercial	961,343	184,545	1,145,888	932,017	167,645	1,099,662	1,101,229	166,172	1,270,101
Warehouses, storehouses, refrigerated storage, etc.	119,346	22,137	141,483	93,433	19,519	112,952	89,309	19,244	108,553
Grain elevators	9,946	7,191	17,137	5,715	4,181	9,896	4,994	3,892	8,886
Hotels, clubs, restaurants, cafeterias, tourist cabins	60,097	18,529	78,626	60,863	16,883	77,746	87,267	16,560	103,827
Office buildings	427,146	61,870	489,016	416,080	56,555	472,635	516,799	60,458	577,257
Stores, retail and wholesale	188,158	44,824	232,982	205,035	39,992	245,027	220,442	35,579	256,021
Garages and service stations	67,138	19,216	86,354	75,032	19,961	94,993	78,696	19,717	98,413
Theatres, arenas, amusement and recreational buildings	86,492	9,628	96,120	74,032	9,309	83,341	105,684	9,578	115,262
Laundries and dry-cleaning establishments	3,020	1,150	4,170	1,827	1,245	3,072	1,038	1,144	2,182
Institutional	1,274,109	105,155	1,379,264	1,225,422	115,428	1,340,850	1,336,859	118,789	1,455,648
Schools and other educational buildings	929,366	54,044	983,410	898,344	62,337	960,681	933,378	64,676	998,054
Churches and other religious buildings	35,602	7,093	42,695	24,959	11,174	36,133	23,723	7,417	31,140
Hospitals, sanatoria, clinics, first-aid stations, etc.	213,402	29,917	243,319	224,666	31,707	256,373	269,982	35,849	305,831
Other	95,739	14,101	109,840	77,453	10,210	87,663	109,776	10,847	120,623
Other Building	302,513	99,436	401,979	329,254	99,942	429,196	363,512	93,755	457,267
Farm buildings (excluding dwellings)	165,190	64,318	229,508	158,637	62,405	221,042	160,101	63,276	223,377
Broadcasting, radio and television, relay and booster stations, telephone exchanges	35,632	7,600	43,232	49,853	4,235	54,088	56,311	4,259	60,570
Aeroplane hangars	13,648	2,573	16,221	17,063	2,544	19,607	13,537	2,009	15,546
Passenger terminals, bus, boat or air	10,877	2,418	13,295	9,215	1,204	10,609	23,575	1,588	25,163

Totals, Building Construction	5,893,596	1,364,053	7,257,649	6,488,591	1,417,057	7,905,648	6,724,945	1,454,726	8,179,671
Engineering Construction									
Marine	105,714	28,536	134,250	116,533	25,970	142,503	107,480	26,184	133,664
Docks, wharves, piers, breakwaters	52,272	12,451	64,723	62,244	9,854	72,098	54,284	10,071	64,355
Retaining walls, embankments, riprapping	13,322	4,913	18,235	16,548	4,090	20,638	18,336	4,212	22,548
Canals and waterways	27,768	6,998	34,766	23,106	7,533	30,639	16,418	7,667	24,085
Dredging and pile driving	3,830	1,688	5,518	4,853	1,446	6,299	3,734	1,045	4,779
Dyke construction	2,063	367	2,430	1,665	138	1,803	6,923	138	7,061
Logging booms	327	627	954	441	774	1,215	722	820	1,542
Other	6,132	1,492	7,624	7,676	2,135	9,811	7,063	2,231	9,294
Road, Highway and Aerodrome	854,102	331,306	1,185,408	866,574	314,742	1,181,316	905,210	345,171	1,259,381
Hard surfaced or paved streets, highways, parking lots, etc.	749,833	273,882	1,023,715	735,300	255,979	991,279	765,778	284,547	1,050,325
Gravel or stone streets, highways, roads, parking lots, etc.									
Dirt, clay or other streets, roads, parking lots, etc.	41,296	29,892	71,188	60,567	27,753	88,320	64,689	27,860	92,549
Grading, scraping, oiling, filling	37,608	17,494	55,102	45,783	21,256	67,039	49,733	21,895	71,628
Sidewalks, paths	15,758	8,282	24,040	15,045	8,727	23,772	15,201	9,918	25,119
Aerodromes, landing fields, runways, tarmac	9,607	1,756	11,363	9,879	1,027	10,906	9,809	951	10,760
Waterworks and Sewerage Systems	324,629	78,741	403,370	329,904	77,484	407,388	411,068	85,178	496,246
Tile drains, drainage ditches, storm sewers	31,663	11,862	43,525	34,732	11,175	45,907	37,344	12,794	50,138
Water mains, hydrants and services	92,636	30,893	123,529	82,531	31,160	113,691	98,136	32,308	130,444
Sewerage systems and connections	170,450	31,007	201,457	194,805	27,933	222,738	244,249	32,811	277,060
Pumping stations, water	25,184	3,630	28,814	13,234	5,996	19,230	24,435	6,017	30,452
Water storage tanks	4,696	1,349	6,045	4,602	1,220	5,822	6,904	1,248	8,152
Dams and Irrigation	218,382	11,702	230,084	181,662	9,803	191,465	238,087	9,923	248,010
Dams and reservoirs	194,622	2,438	197,060	157,980	1,568	159,548	213,651	1,591	215,242
Irrigation and land reclamation projects	23,760	9,264	33,024	23,682	8,235	31,917	24,436	8,332	32,768
Electric Power	747,175	78,082	825,257	857,388	85,630	943,018	884,536	97,251	981,777
Electric power generating plants, including water conveying and controlling structures	351,477	20,334	371,811	371,703	26,699	398,402	294,169	29,985	324,154
Electric transformer stations	42,619	6,933	49,552	55,209	6,435	61,644	76,237	7,323	83,560
Power transmission and distribution lines, trolley wires	332,507	44,409	376,916	408,627	46 328	454,955	491,550	53,227	544.777
Street lighting	20,572	6,406	26,978	21,849	6,168	28,017	22,570	6,716	29,286
Railway, Telephone and Telegraph	338,135	186,026	524,161	346,675	178,949	525,624	374,428	195,785	570,213
Railway tracks and roadbed	137,035	113,969	251,004	142,490	111,889	254,379	162,414	121,821	284,235
Signals and interlockers	9,242	12,933	22,175	11,683	13,812	25,495	13,675	14,894	28,569

7.—Value of Construction Work Performed, by Type of Structure, 1968-70—concluded

Type of Structure	1968			1969			1970		
	New	Repair	Total	New	Repair	Total	New	Repair	Total
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Engineering Construction—concluded									
Railway, Telephone and Telegraph—concluded									
Telegraph and telephone lines, underground and marine cables	191,858	59,124	250,982	192,502	53,248	245,750	198,339	59,070	257,409
Gas and Oil Facilities	**774,362**	**126,389**	**900,751**	**795,245**	**144,478**	**939,723**	**901,345**	**149,566**	**1,050,911**
Gas mains and services	86,078	7,951	94,029	112,179	8,179	120,358	93,438	8,630	102,068
Pumping stations, oil	8,290	2,329	10,619	7,002	2,482	9,484	7,289	2,785	10,074
Pumping stations, gas	30,271	3,453	33,724	27,722	1,035	28,757	45,591	1,313	46,904
Oil storage tanks	12,911	3,055	15,966	13,210	2,680	15,890	12,264	2,969	15,233
Gas storage tanks	6,981	57	7,038	6,594	187	6,781	2,633	227	2,860
Oil pipe lines	41,565	4,070	45,635	32,340	2,931	35,271	12,953	3,299	16,252
Gas pipe lines	98,641	2,959	101,600	84,063	2,423	86,486	120,490	2,604	123,094
Oil wells	238,285	37,181	275,466	229,091	37,244	266,335	252,932	37,322	290,254
Gas wells	80,635	6,360	86,995	114,167	18,779	132,946	128,362	18,186	146,548
Oil refinery—processing units[1]	102,960	45,915	148,875	90,745	46,139	136,884	99,769	48,380	148,149
Natural gas cleaning plants	67,745	13,059	80,804	78,132	22,399	100,531	125,624	23,851	149,475
Other Engineering	**652,329**	**100,396**	**752,725**	**689,580**	**95,707**	**785,287**	**893,122**	**106,519**	**999,641**
Bridges, trestles, culverts, overpasses, viaducts	198,265	29,820	228,085	203,543	30,611	234,154	207,406	33,516	240,922
Tunnels and subways	19,687	1,539	21,226	26,208	1,051	27,259	43,766	1,744	45,510
Incinerators	69	230	299	17	78	95	106	108	214
Park systems, landscaping, sodding, etc	15,913	6,026	21,939	17,099	6,363	23,462	18,445	6,587	25,032
Swimming pools, tennis courts, outdoor recreation facilities	1,354	1,564	2,918	3,424	1,281	4,705	4,066	1,327	5 393
Mine shafts and other below surface workings	181,794	9,272	191,066	197,491	5,913	203,404	210,366	6,996	217,362
Fences, snowsheds, signs, guard rails	32,005	14,204	46,209	31,806	12,969	44,775	34,162	13,302	47,464
Other	203,242	37,741	240,983	209,992	37,441	247,433	374,805	42,939	417,744
Totals, Engineering Construction	**4,014,828**	**941,178**	**4,956,006**	**4,183,561**	**932,763**	**5,116,324**	**4,715,286**	**1,015,577**	**5,730,843**
Totals, All Construction	**9,908,424**	**2,305,231**	**12,213,655**	**10,672,152**	**2,349,820**	**13,021,972**	**11,440,211**	**2,470,303**	**13,910,514**

[1] Includes petrochemical plants.

Principal statistics of the construction industry are shown by province and for con-ctors, utilities, governments and others in Table 8. The statistics given for Canada a whole may be considered as relatively accurate but those for individual provinces and class of builder are approximations only. All estimates given for cost of materials used e based on ratios of this item to total value of work performed, derived from annual rveys of construction work and applied to the total value-of-work figures. Estimates of bour content are similarly based but, in addition, are adjusted to include working owners d partners and their withdrawals. Although the ratios were calculated in some detail type of industry, still further refinements are required. There are also some difficulties obtaining the precise location of projects undertaken or to be undertaken by large mpanies operating in a number of provinces. However, if used with these qualifications mind, the table provides useful estimates.

8.—Labour Content, Cost of Materials and Value of Work Performed in Construction, by Province and by Employer, 1968-70

NOTE.—Actual expenditures 1968; preliminary 1969; intentions 1970.

Province or Employer and Year	Labour Content		Cost of Materials Used	Value of Work Performed
	Number	Value		
		$'000	$'000	$'000
Province				
wfoundland 1968	16,136	94,173	149,437	308,657
1969	16,449	111,489	167,891	363,493
1970	17,408	129,243	198,260	423,193
nce Edward Island 1968	2,152	10,691	14,620	33,890
1969	2,042	11,741	15,840	36,290
1970	2,043	12,926	17,415	40,152
va Scotia 1968	22,670	126,839	179,621	382,095
1969	22,380	147,674	216,800	447,882
1970	21,171	152,685	222,828	458,568
w Brunswick 1968	17,457	91,415	131,250	274,306
1969	15,531	92,492	137,178	282,366
1970	15,135	99,288	146,857	304,424
ebec 1968	129,773	887,632	1,178,876	2,552,050
1969	128,662	919,684	1,231,897	2,652,014
1970	122,938	968,505	1,292,318	2,791,452
tario 1968	216,225	1,570,875	1,969,168	4,309,434
1969	211,552	1,668,179	2,117,399	4,608,270
1970	209,962	1,829,911	2,290,939	5,012,202
nitoba 1968	32,310	240,126	293,193	662,332
1969	33,859	267,514	327,148	738,919
1970	30,320	261,514	322,814	725,687
katchewan 1968	30,482	223,027	301,109	668,659
1969	26,772	196,194	260,877	578,936
1970	23,748	191,001	251,517	560,785
berta 1968	68,667	480,230	627,377	1,442,759
1969	67,585	532,128	705,700	1,604,958
1970	64,540	564,757	746,332	1,707,560
tish Columbia, Yukon Territory and North- 1968	68,558	557,536	715,590	1,579,473
vest Territories. 1969	67,648	603,793	777,884	1,708,844
1970	67,872	668,227	850,962	1,886,491
Totals 1968	**604,430**	**4,282,544**	**5,560,241**	**13,213,655**
1969	**592,480**	**4,550,888**	**5,958,614**	**13,021,972**
1970	**575,137**	**4,878,057**	**6,340,243**	**13,910,511**

8.—Labour Content, Cost of Materials and Value of Work Performed in Construction, by Province and by Employer, 1968-70—concluded

Province or Employer and Year	Labour Content		Cost of Materials Used	Value of Work Performed
	Number	Value		
		$'000	$'000	$'000
Employer				
Contractors 1968	456,121	3,296,067	4,666,458	9,935,343
1969	447,583	3,508,403	4,990,452	10,592,717
1970	430,574	3,724,321	5,271,018	11,219,283
Utilities 1968	51,472	382,326	452,820	923,017
1969	53,351	428,046	507,382	1,040,566
1970	53,804	475,863	565,083	1,156,359
Governments 1968	62,945	378,421	182,992	735,660
1969	58,628	382,127	191,760	749,608
1970	58,791	423,771	211,803	831,484
Others 1968	33,892	225,730	257,971	619,635
1969	32,918	232,312	269,020	639,081
1970	31,968	254,102	292,338	703,388

Price Index Numbers of Construction and Capital Goods.—Reference is made here to Chapter XXI, Part IV on Prices. Section 2 of that Part contains index numbers which measure price changes in residential and non-residential building materials and changes in construction wage rates; price indexes of highway construction which express prices paid by provincial governments in contracts awarded for highway construction each year as a percentage of prices paid in 1961; and price indexes of electrical utility construction (distribution systems, transmission lines, transformer stations) which provide an estimate of the impact of price change on the cost of materials, labour and equipment used in constructing and equipping such utilities.

Subsection 2.—Building Permits Issued

The estimated value of proposed construction is indicated by the value of building permits issued. Figures of building permits issued are collected from more than 1,400 municipalities across the country and are available for individual municipalities, for metropolitan areas, for provinces and for economic areas in Quebec, Ontario and Manitoba.

The total value of permits issued for building construction in 1969 was $4,895,551,000, a figure 2.5 p.c. higher than that in 1968. Residential construction values held steady, showing only a 1-p.c. increase and, although non-residential construction values increased by 4.1 p.c., the advance was more than accounted for by increases of 7 p.c. and 20 p.c. in the industrial and commercial sectors, respectively; the institutional and government permit values decreased by 7 p.c. All provinces showed increases in 1969 except Newfoundland, Quebec and Saskatchewan, where the decreases were 19 p.c., 14 p.c. and 32 p.c., respectively. The value of building permits issued in each province in the years 1968 and 1969 is given in Table **9**, in each of 50 municipalities in Table **10** and in each of the 19 metropolitan areas in Table **11**. The latter made up 68 p.c. of the 1969 total for Canada.

-Value of Building Permits Issued, by Province, 1968 and 1969 with Totals for 1965-69

Province and Year	Residential Construction			Non-residential Construction			Total
	New	Repair	Total	Industrial	Commercial	Institutional and Government	
	$'000	$'000	$'000	$'000	$'000	$'000	$'000
wfoundland.....1968	20,838	1,269	22,107	2,179	6,947	4,701	35,934
1969	10,940	1,101	12,041	1,025	2,767	13,177	29,010
nce Edward Island...1968	1,592	122	1,714	524	818	1,077	4,133
1969	2,160	123	2,283	214	1,652	621	4,770
va Scotia.....1968	36,075	2,421	38,496	4,625	20,674	39,817	103,612
1969	64,243	2,949	67,192	3,842	21,904	54,957	147,895
w Brunswick.....1968	23,489	2,152	25,641	7,420	11,656	30,152	74,869
1969	22,906	2,071	24,977	11,389	10,796	37,327	84,489
ebec.....1968	446,048	20,818	466,866	214,042	121,038	264,585	1,066,531
1969	407,260	15,324	422,584	128,598	148,084	221,560	920,826
ario.....1968	1,085,549	37,642	1,123,191	183,294	294,108	550,900	2,151,493
1969	1,077,806	36,772	1,114,578	297,807	382,683	507,290	2,302,358
nitoba.....1968	71,553	2,690	74,243	20,481	25,657	60,125	180,506
1969	98,141	2,463	100,604	8,985	40,274	32,715	182,578
katchewan.....1968	70,698	3,163	73,861	6,018	29,370	34,217	143,466
1969	51,373	2,282	53,655	5,200	23,947	14,751	97,553
erta.....1968	235,019	5,249	240,268	33,298	98,898	94,415	466,879
1969	242,292	4,494	246,786	46,572	102,679	80,279	476,316
tish Columbia.....1968	326,726	12,519	339,245	58,789	87,037	63,221	548,292
1969	373,111	11,379	384,490	63,416	104,369	97,481	649,756
Totals.....**1965**	**1,686,412**	**70,357**	**1,756,769**	**430,324**	**782,845**	**839,662**	**3,809,600**
1966	**1,518,038**	**73,963**	**1,592,001**	**473,661**	**736,726**	**912,702**	**3,715,090**
1967	**1,847,510**	**76,134**	**1,923,644**	**424,947**	**677,001**	**1,042,241**	**4,067,833**
1968	**2,317,587**	**88,045**	**2,405,632**	**530,670**	**696,203**	**1,143,210**	**4,775,715**
1969	**2,359,232**	**78,958**	**2,429,190**	**567,048**	**839,155**	**1,060,158**	**4,895,551**

10.—Estimated Value of Proposed Construction as Indicated by Building Permits Issued in 50 Municipalities, 1968 and 1969

Province and Municipality	1968	1969	Province and Municipality	1968	1969
	$'000	$'000		$'000	$'000
wfoundland—			**Quebec**—concluded		
t. John's	27,944	23,107	St. Laurent	27,839	16,987
			Ste. Foy	28,542	35,262
nce Edward Island—			Sept Îles	6,800	6,031
harlottetown	3,038	3,830	Sherbrooke	11,584	14,932
			Trois-Rivières	6,299	12,829
va Scotia—					
alifax	43,385	73,993	**Ontario—**		
			Brampton	15,431	9,123
w Brunswick—			Burlington	38,261	31,906
redericton	6,607	15,422	Etobicoke (borough)	99,584	134,839
oncton	17,160	11,505	Hamilton	60,462	76,355
aint John	20,067	20,641	Kitchener	36,738	38,243
			London	60,991	99,503
ebec—			London Township	1,253	1,487
aSalle	25,894	17,126	Mississauga	110,409	104,749
ontreal	154,904	178,908	Nepean Township	22,372	31,468
uebec	23,536	72,264	Oshawa	19,263	40,396

10.—Estimated Value of Proposed Construction as Indicated by Building Permits Issued in 50 Municipalities, 1968 and 1969—concluded

Province and Municipality	1968	1969	Province and Municipality	1968	1969
	$'000	$'000		$'000	$'000
Ontario—concluded			**Saskatchewan**—concluded		
Ottawa	104,752	111,237	Regina	38,325	30,3
Thunder Bay	7,401	10,483	Saskatoon	52,176	41,93
Scarborough (borough)	133,343	112,217			
Toronto	232,179	233,990	**Alberta**—		
Windsor	61,378	90,411	Calgary	182,889	172,0
York North (borough)	255,456	170,636	Edmonton [2]	164,821	169,17
York (borough)	24,835	19,023	Jasper Place [2]		
			Lethbridge	10,120	17,64
Manitoba—			Medicine Hat	6,436	5,38
Fort Garry			Red Deer	6,272	7,24
St. Boniface					
St. James [1]	148,861	156,000	**British Columbia**—		
Winnipeg			Burnaby District	46,037	48,48
			Richmond Township	36,762	23,58
Saskatchewan—			Surrey District	32,099	24,81
Moose Jaw	3,239	1,789	Vancouver	105,189	108,96
Prince Albert	7,153	2,356	Victoria	25,129	38,55

[1] Metropolitan Corporation of Greater Winnipeg. [2] Jasper Place included with Edmonton followi annexation.

11.—Estimated Value of Building Permits Issued in Metropolitan Areas, 1968 and 1969

Metropolitan Area	1968	1969	Metropolitan Area	1968	1969
	$'000	$'000		$'000	$'000
St. John's [1]	27,944	23,107	London	63,899	102,05
Halifax	56,482	100,375	Windsor	72,460	90,41
Saint John	20,299	21,232	Winnipeg	148,861	156,00
Quebec	107,546	170,335	Regina	38,325	30,34
Montreal	559,134	480,499	Saskatoon	52,176	41,93
Ottawa–Hull	184,869	167,487	Calgary	183,964	172,06
Toronto	955,781	907,359	Edmonton	181,783	196,37
Hamilton	126,766	128,147	Vancouver	328,372	338,21
Kitchener	80,153	86,327	Victoria	56,240	77,19
Sudbury	33,440	57,093			

[1] Although this is a metropolitan area, only St. John's proper is included in the building permits survey.

Section 3.—Housing*

Subsection 1.—Government Aid to House-Building

Federal Assistance.—The role of the Federal Government in housing has expande progressively since the introduction of the first continuing statute in 1935. Although th Government originally entered the housing field in 1918 when it made money available t the provinces for re-lending to municipalities for housing purposes, the first general piec of federal housing legislation was the Dominion Housing Act passed in 1935. This wa followed by the National Housing Acts of 1938 and 1944, culminating in 1954 with th present National Housing Act, defined as "an Act to promote the construction of ne houses, the repair and modernization of existing houses and the improvement of housin and living conditions". Central Mortgage and Housing Corporation (CMHC), a Crow

* Prepared (June 1970) in the Information Division, Central Mortgage and Housing Corporation, Ottawa.

ıcy incorporated by Act of Parliament in 1945, administers the National Housing Act co-ordinates the activities of the Federal Government in housing. The Corporation the authority and responsibility for a variety of functions affecting housing in its long- ı outlook as well as in its immediate requirements. It is empowered to act as an rer of mortgage loans, as a lender or investor of public funds, as a guarantor and as an er of property and other assets. It also acts as a research agency in fields associated ı housing and assists provinces and municipalities in many aspects of urban growth. general, the Government, through the successive Housing Acts, has attempted to ılate and supplement the market for housing rather than assume direct responsibilities rightfully belong to other levels of government or that could be borne more effectively private enterprise. In each case the aim has been to increase the flow of mortgage ey and to encourage lenders to make loans on more favourable terms to prospective e owners. Close to half of the country's present stock of approximately 5,900,000 ses have been built since the first covering legislation was enacted; about one third of e were financed in one way or another under the Housing Acts.

Under the terms of the National Housing Act, 1954 and its subsequent amendments, Federal Government is active in many ways.

Loan Insurance.—Insured mortgage loans may be made for both home-ownership for rental housing. They are normally available from approved lenders to individual e-owner applicants, to builders constructing houses for sale or for rent and for some ial groups, such as co-operative housing associations and farmers. Insured loans are available for the purchase, improvement, refinancing or sale of existing dwellings.

Prior to June 1969, the maximum interest rate on insured loans was restricted to $2\frac{1}{4}$ p.c. ve the long-term Government bond rate adjusted quarterly to the nearest one eighth of per cent. Amendment to the National Housing Act, approved June 27, 1969, removed restriction from all but home improvement loans, thus allowing the NHA interest rate nd its own level in relation to the open market.

Upon application, the borrower pays CMHC a fee of $35 per unit to help defray enses incurred in the examination of plans and specifications, in the determination nding values and in compliance inspections during construction. An approved lender ires evidence that a home owner or home purchaser is providing 5 p.c. of the value of house from his own resources. For the home owner this equity may be in the form ash or a combination of cash, land and labour; for the home purchaser it may be in cash abour. The regulations require that gross debt service—the ratio of repayments of cipal and interest plus municipal taxes to the income of the borrower—should not ed 27 p.c., although instances involving higher ratios may be considered on their merits. borrower pays an insurance fee which is added to the amount of the loan and is repaid the term of the mortgage; the fee ranges from $\frac{7}{8}$ p.c. to $1\frac{1}{4}$ p.c. of the loan, according ype of unit and time of mortgage advances.

Loans for new home-ownership may be up to 95 p.c. of the first $20,000 of lending value 80 p.c. of the remainder to a maximum loan of $25,000. For rental housing, loans may or 90 p.c. of lending value. Loan maxima vary with the type of rental housing but ıot exceed those set for similar dwellings built for home-ownership. Current maxima single family units $25,000; apartment multiple units $18,000 per unit; and hostels 00 per person accommodated. Loans for existing houses may be 95 p.c. of the lending e, up to a maximum amount of $18,000 per housing unit. The repayment period may ıp to 40 years for new home-ownership, rental housing, and for existing home-owner llings.

Direct Loans.—CMHC may make direct loans for both home-ownership and ren housing where, in the opinion of the Corporation, loans are not available through approv lenders. Loans are made to any eligible home-owner applicant but direct loans to build are normally subject to a requirement that the houses be pre-sold to satisfactory purchase By the end of 1970, direct lending by the Corporation totalled approximately $4,203,397,0

CMHC may make loans to any organization, corporation or individual to assist financing the construction of low-rental housing projects or in the purchase of existi buildings and their conversion into low-rental housing projects. In addition to se contained units, developments undertaken may include hostel or dormitory accommodati for elderly and low-income individuals. Loans may be up to a maximum of 95 p.c. of t lending value established by CMHC. The period for repayment may not exceed the use life of the project and in any case may not be for more than 50 years. The interest rate established by Order in Council. Plans and specifications for such projects as well as f ancing and operating arrangements must be approved by the Corporation.

Since December 1960, the National Housing Act has provided financial assistan for the elimination or prevention of water and soil pollution. CMHC is authorized make a loan to a province, municipality or a municipal sewerage corporation for the purp of assisting in the construction or expansion of a sewage treatment project. The loan m not exceed two thirds of the cost of the project and the maximum repayment term is years from date of completion. The interest rate is prescribed by the Governor in Coun The agreement covering the project contains a condition whereby 25 p.c. of the loan princi and 25 p.c. of the accrued interest will be forgiven for projects completed to the satisfacti of CMHC on or before Mar. 31, 1975. Where construction is not completed before th date, 25 p.c. of the loan advanced or warrantable by construction progress at that da plus 25 p.c. of the accrued interest on advances, may be forgiven.

Long-term loans are available to a province or its agency, a municipality or its agen a hospital, a school board, a university or college, a co-operative association or a charita corporation for the purpose of assisting in the construction of a student housing proje or the acquisition of existing buildings and their conversion into a student housing proje In all cases, the government of the province concerned must approve the loan. CMH may lend up to 90 p.c. of the project cost, subject to maximum amounts as follows: $25,0 per new unit; $18,000 per self-contained unit or existing housing unit, and $7,000 per pers housed in dormitory or hostel accommodation. The term of the loan may not exceed years. The interest rate is prescribed by the Governor in Council.

Guarantees.—CMHC is authorized to give a limited guarantee to banks or approv instalment credit agencies in return for an insurance fee paid by the borrower on loans ma for additions, repairs and alterations to existing houses and apartments. A home improv ment loan and the balance owing on any existing NHA home improvement loan on t property may not exceed $4,000 for a one-family dwelling or $4,000 for the first unit of duplex, semi-detached or multiple-family dwelling, plus $1,500 for each additional un Loans are repayable in monthly instalments over a period not exceeding 10 years. T maximum rate of interest is restricted to 2¼ p.c. above the long-term Government bo rate adjusted quarterly to the nearest one eighth of one per cent.

Public Housing.—Under the National Housing Act and complementary provinci legislation, the Federal Government and the government of a province may enter into partnership agreement to build rental housing for families and individuals of low income to purchase and rehabilitate existing housing for this purpose. Projects may include host or dormitory accommodation in addition to self-contained units. The Federal Governme

s up to 75 p.c. of the capital costs and the provincial government the remainder, although latter may call upon the municipality concerned to bear a portion of the provincial re. Rents for units in federal-provincial projects are related to the tenant's family ome and size of family. Operating deficits are shared on the same contractual basis as capital costs.

As an alternative method of producing public housing, the CMHC is empowered to ke long-term loans to a province, or to a municipality or public housing agency with approval of the province, for the provision of housing accommodation. Projects may sist of new construction or existing buildings and include dormitory and hostel accomdation as well as self-contained family units. Loans may be up to 90 p.c. of the total s as determined by CMHC and for a term as long as 50 years but not in excess of the ful life of the development. The maximum that may be borrowed for a fully serviced rtment is $18,000, and for hostels or dormitories $7,000 for each person accommodated. a house, the maximum is $25,000. The interest rate is set by the Governor in Council. ere this alternative is selected, federal grants may be made covering up to 50 p.c. of es incurred in the operation of public housing projects, for a period of up to 50 years not exceeding the useful life of the project.

Urban Renewal.—Federal grants and loans are available under the Act to assist provs and municipalities undertaking programs of urban renewal. CMHC, with Federal vernment approval, may arrange with a municipality to undertake a study to identify hted areas, determine housing requirements and provide data upon which an orderly gram of conservation, rehabilitation and redevelopment can be based. The federal tribution may be as much as 75 p.c. of the cost. The legislation also authorizes federal tributions equal to one half of the costs of preparing an urban renewal scheme setting proposals for urban renewal action, a similar cost-sharing arrangement for the implentation of a scheme, and loans up to two thirds of the provincial or municipal share of cost of carrying out an urban renewal scheme. Loans may be for 15 years at an interest e prescribed by the Governor in Council. To encourage the improvement and conservaa of housing meeting minimum standards of construction, loans are available for the sale, chase or refinancing of existing housing in urban renewal areas not designated for nolition.

Activity under the urban renewal provisions of the National Housing Act was restricted 969 following the report of the Task Force on Housing and Urban Development. The ort expressed strong reservations about existing approaches to urban renewal and made cific recommendations for the future. As a result of this report, an in-depth study was ertaken with a view to formulating a new federal policy for urban assistance. Prenary findings indicated that, in the next decade, urban assistance would be based on y different principles to those used in the past. In August, a suspension of federal roval of new projects was put into effect. As an interim measure negotiations were ertaken to permit at least partial implementation of a small number of projects.

Land Assembly.—The Federal Government and the government of a province may er into an agreement to provide for a land assembly project which involves the develop-t of raw land for housing purposes. The Federal Government pays up to 75 p.c. of cost and the provincial government the remainder. The latter may call upon the nicipality concerned to bear a portion of the provincial share. In addition, loans equal 0 p.c. of the cost of assembling and servicing land for public housing or general housing poses are available at a preferential interest rate to provinces, municipalities and their ncies.

CMHC Building.—The Corporation may construct and administer housing and cer other buildings on its own account and for other government departments and agen Its responsibilities include the provision of architectural and engineering designs, calling of public tenders and the administration of construction contracts—including necessary on-site surveying and engineering. On such contracts, the Corporation car out full architectural and engineering inspections.

Research.—CMHC is concerned with building technology in the formulation of sta ards for housing construction, in the use of suitable materials and in the developmen new building techniques. The Corporation has no laboratory facilities but has di experience of performance in the field and seeks the advice of specialists in various agen and departments of the Federal Government in such matters. Research into the fact affecting housing is concerned with the measurement of the demand for new housing, volume of new housing built and the supply of mortgage money for house construct The Corporation also co-ordinates and publishes statistical information on housing. Fu provided under the National Housing Act support the activities of the Canadian Hous Design Council, the Community Planning Association of Canada and the Canadian Cou on Urban and Regional Research.

Other Federal Legislation.—The Farm Credit Act, 1959 provides for federal long-t loan assistance for housing as well as for other farm purposes (see pp. 561-562); the Vetera Land Act, 1942 provides a form of loan and grant assistance to veterans for housing other purposes (see p. 409); and the Farm Improvement Loans Act, 1944 (see pp. 559-5 provides for guarantees for intermediate- and short-term loans made by approved lend agencies to farmers for housing and other purposes. These three statutes are concer only incidentally with housing.

Provincial Assistance.—All provinces have complementary legislation providing joint federal-provincial housing and land assembly projects and, in addition, most provin have enacted separate legislation with respect to housing. Details of such assistance m be secured from the provincial government departments listed in the Directory of Sour of Official Information included in Chapter XXVII under the heading of "Housing".

Subsection 2.—Housing Activities, 1969-70

During 1969, housing starts totalled 210,415 dwelling units, 6.9 p.c. above the previ record of 196,878 established in 1968. Completions also increased to a record level 195,826 units from 170,993 in the previous year. Dwellings under construction at year-e rose from 126,638 to 137,357. Apart from the production of self-contained housing uni hostel accommodation was provided for more than 19,000 persons, mainly the elderly a students. Investment in housing was also at a record level of $3,400,000,000, an incre of 18.6 p.c. over 1968.

Housing for low-income groups made a significant advance in 1969 as a result Government policy which directed the principal federal effort into this field. Of the 210,4 starts during the year, just over 28,000 were under NHA rental programs for low-inco families, including students; this compared with 13,800 in 1968 and 10,300 in 1967. T policy continued into 1970 and, for this purpose, two thirds of the federal housing bud of $854,000,000 was allocated to housing for low-income families, elderly people, stude and handicapped individuals; it is estimated that this amount will support the provision about 35,000 units.

Two factors dominated house-building activity during 1969. Massive injection mortgage funds from both public and private sources in the last few months of 1968 a

early 1969 resulted in record seasonally adjusted start rates of 267,300 and 215,500 units r year for the first and second quarters of 1969. The second factor, which emerged ring the latter half of the year, was the effect of the high and rising level of interest rates the supply of mortgage funds with its resultant decrease in house-building activity. he latter circumstance had the effect of reducing the annual rate of starts to 186,000 by e end of 1969.

The same situation continued into 1970 with further drops in the annual rate to a low 161,600 unit starts in February. Starting in March, increases were recorded which, though modest, appeared to be consistant with the trend in private institutional lending, dicating that building activity in the latter part of 1970 might compensate in part for e low start rate experienced in the first half of the year. In actual terms, starts in urban eas during the first four months of 1970 totalled 29,272, a decrease of 41 p.c. from the tal of 49,499 for the same period of 1968. This was equivalent to a seasonally adjusted nual rate of 166,600 units for all areas in Canada.

—Dwelling Units Started and Completed, by Type of Financing, 1960-69, and by Region, 1968 and 1969

(Exclusive of the Yukon and Northwest Territories)

Year and Region	Dwelling Units Started					Dwelling Units Completed
	National Housing Act		Conventional Institutional Loans	All Other Financing	Total	
	CMHC Loans	Approved Lenders Loans				
	No.	No.	No.	No.	No.	No.
0	13,788	18,923	40,116	36,031	108,858	123,757
1	23,852	35,334	38,316	28,075	125,577	115,608
2	15,479	31,790	54,214	28,612	130,095	126,682
3	21,213	28,505	71,983	26,923	148,624	128,191
4	28,728	26,118	85,090	25,722	165,658	150,963
5	30,091	24,172	88,669	23,633	166,565	153,037
6	37,483	12,438	55,208	29,345	134,474	162,192
7	41,814	20,829	64,683	36,797	164,123	149,242
8	22,348	48,542	80,926	45,062	196,878	170,993
9	24,965	55,645	85,680	44,125	210,415	195,826
1968						
antic Provinces	1,219	613	4,596	4,611	11,309	9,467
ebec	4,731	10,387	19,821	11,538	46,477	38,961
tario	11,272	28,111	28,862	12,130	80,375	68,003
irie Provinces	3,329	7,846	14,308	7,309	32,792	29,008
tish Columbia	1,797	1,585	13,339	9,474	26,195	25,554
1969						
antic Provinces	1,675	1,370	5,262	5,473	13,780	12,099
ebec	7,151	10,138	19,133	6,991	43,413	44,605
tario	10,029	28,639	29,782	12,996	81,446	80,236
irie Provinces	3,690	11,508	16,040	8,718	39,956	33,177
tish Columbia	2,420	3,990	15,463	9,947	31,820	25,709

13.—Dwelling Units Started in Metropolitan and Major Urban Areas, 1968 and 1969

Area	Population (Census 1966)	Dwelling Units Started					
		1968	1969				
			Total	Single Detached	Semi-detached and Duplex	Row	Apartment
	'000	No.	No.	No.	No.	No.	No.
Metropolitan Areas—							
Calgary	331	7,403	9,737	3,043	754	676	5,264
Edmonton	401	9,003	9,807	2,368	152	588	6,699
Halifax	198	1,444	3,318	432	304	—	2,582
Hamilton	449	4,920	5,077	1,783	72	338	2,884
Kitchener	192	3,503	3,841	1,409	374	306	1,752
London	207	3,492	4,033	1,260	129	337	2,307
Montreal	2,437	30,634	23,650	3,627	602	323	19,098
Ottawa-Hull	495	5,642	7,275	2,571	343	1,344	3,017
Quebec	413	4,703	6,104	1,224	170	172	4,538
Regina	131	1,600	1,689	648	186	64	791
Saint John	101	431	439	276	52	—	111
St. John's	101	977	771	524	38	203	6
Saskatoon	116	2,278	1,935	640	154	16	1,125
Sudbury	117	743	1,779	1,125	60	269	325
Toronto	2,159	37,775	31,874	5,782	2,535	1,838	21,719
Vancouver	892	15,690	17,690	4,763	402	580	11,945
Victoria	174	2,516	3,744	1,009	278	226	2,231
Windsor	212	1,469	2,506	1,068	26	118	1,294
Winnipeg	509	4,739	9,030	2,134	355	361	6,180
Totals, Metropolitan Areas	**9,635**	**139,162**	**144,299**	**35,686**	**6,986**	**7,759**	**93,868**
Major Urban Areas—							
Brampton	45	2,188	541	223	114	—	204
Brantford	62	508	487	227	22	67	171
Chicoutimi-Jonquière	109	625	734	313	62	118	241
Drummondville	43	195	139	53	15	—	71
Guelph	51	825	1,300	461	42	116	681
Kingston	71	643	1,471	452	16	12	991
Moncton	60	900	671	217	88	—	366
Niagara Falls	61	457	350	215	20	—	115
Oshawa	100	908	1,832	567	267	386	612
Peterborough	56	535	444	157	28	128	131
St. Catharines	109	1,361	1,235	588	60	71	516
St. Jean	43	167	295	119	10	—	166
St. Jérôme	33	246	316	133	14	—	169
Sarnia	67	560	658	248	6	14	390
Sault Ste Marie	75	313	502	301	36	—	165
Shawinigan	65	68	62	44	4	—	14
Sherbrooke	80	855	1,020	216	72	—	732
Sydney-Glace Bay	106	361	548	331	34	87	96
Thunder Bay	98	513	1,000	321	118	97	464
Timmins	40	39	112	52	2	58	—
Trois-Rivières	95	799	748	322	14	—	412
Valleyfield	34	140	93	43	2	—	48
Welland	59	310	439	266	50	—	123
Totals, Major Urban Areas	**1,562**	**13,516**	**14,997**	**5,869**	**1,096**	**1,154**	**6,878**
All other	8,775	44,200	51,119	36,849	2,291	1,808	10,171
Canada[1]	**19,972**	**196,878**	**210,415**	**78,404**	**10,373**	**10,721**	**110,917**

[1] Excludes the Yukon and Northwest Territories.

Operations under the National Housing Act.—NHA mortgage loans amounting to $1,197,228,000 were approved in 1969 for the provision of 79,868 new units and 17,23[illegible] hostel beds, compared with loans of $1,242,055,000 approved for 86,641 new dwellings and 14,119 hostel beds in 1968. Direct lending by CMHC for the second consecutive year was below the volume of insured loans by approved lenders operating under the Act; loans by the federal agency had a value of $546,938,000 against $650,290,000 for approved lenders

ans made available through private lenders in 1969 amounted to $700,621,000 for 48,695 vellings. Trust companies remained the largest source of private funds, approving loans r 16,833 units; insurance company loans represented 9,059 dwellings; and chartered bank ns amounted to $234,151,000, representing 14,944 units.

14.—Mortgage Loans Approved by Lending Institutions, by Type of Property and of Loan, 1960-69

Year	New Housing		Existing Houses	Other Property	Total
	NHA Loans	Conventional Loans	Conventional Loans	Conventional Loans	
	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000
0	242	307	221	263	1,033
1	453	333	300	298	1,384
2	412	450	358	311	1,531
3	385	652	430	373	1,840
4	353	812	640	507	2,312
5	320	902	749	581	2,552
6	191	574	471	382	1,618
7	356	745	655	369	2,125
8	832	963	572	335	2,702
9	701	989	662	432	2,784

Borrower and House Characteristics.—The average income of purchasers of NHA-anced houses in 1969 was $9,385 or, in terms of family income, $10,810. These incomes re 6.6 p.c. higher than the corresponding averages for purchasers in 1968 and appeared be in line with the general increase in incomes in 1969. As in previous years, relatively w purchasers of NHA houses were drawn from the lower third of the range of family comes. In 1969 only 0.1 p.c. of the borrowers had family incomes of less than $5,000 compared with 1.4 p.c. in 1967.

The average age of purchasers of NHA houses was about 33 years in 1969, a slight crease from earlier years. In 1969 just over one half of the purchasers had two or more ildren and 27.6 p.c. had previously been home owners.

The average price of NHA-financed houses purchased in 1969, including many started the previous year, was $20,831. On these houses, purchasers provided down-payments eraging $3,903 and undertook monthly payments of $190.76 for mortgage principal, terest and taxes. Compared with 1968, these represented increases of 2.8 p.c. in price d 20.3 p.c. in monthly charges and a decrease of 14.2 p.c. in down-payment. The pro-rtion of monthly charges to income increased from 21.8 p.c. to 22.6 p.c.

As in other years, most of the NHA-financed single-detached houses purchased in 69 were bungalows, which type represented 72.4 p.c. of the total compared with 75.6 p.c. 1968. The proportion of split-level dwellings increased from 18.4 p.c. to 21.1 p.c. and at of two-storey dwellings from 5.4 p.c. to 6.0 p.c. Of these dwellings about 84 p.c. had ree bedrooms and the remainder had four or more.

Loans for Low-Rental Housing.—In 1969, loans amounting to a total of $444,835,000 re approved to assist in the construction of 28,040 self-contained units of low-rental using and hostel accommodation for 19,211 persons.

Loans for Student Housing Projects.—Loans totalling $67,812,000 were approved in 69 for 58 student housing projects, involving the construction of 1,604 self-contained units, 97 hostel beds, and the purchase and conversion of existing buildings to provide a further units and 806 beds. Comparable figures for 1968 were 1,115 new units, 8,833 new hostel ds and conversion of existing buildings to provide 167 units and 988 beds.

15.—Loans Approved for Student Housing Projects, by Province, 1969

Province	New Construction				Conversions				Totals			
	Loans	Units	Hostel Beds	Amount	Loans	Units	Hostel Beds	Amount	Loans	Units	Hostel Beds	Amou
	No.	No.	No.	$'000	No.	No.	No.	$'000	No.	No.	No.	$'00
P.E.I.	—	—	—	99	—	—	—	—	—	—	—	
N.S.	2	2	346	2,080	—	—	—	—	2	2	346	2,0
N.B.	1	—	213	1,491	—	—	—	—	1	—	213	1,4
Que.	14	—	4,009	18,610	2	—	559	1,317	16	—	4,568	19,9
Ont.	10	1,193	3,091	30,960	11	6	217	792	21	1,199	3,308	31,7
Man.	3	84	176	2,480	1	17	—	135	4	101	176	2,6
Sask.	2	175	303	4,040	1	—	20	36	3	175	323	4,0
Alta.	3	143	50	2,680	1	—	10	26	4	143	60	2,7
B.C.	7	7	709	3,066	—	—	—	—	7	7	709	3,0
Canada[1]	**42**	**1,604**	**8,897**	**65,506**	**16**	**23**	**806**	**2,306**	**58**	**1,627**	**9,703**	**67,8**

[1] No loans were approved for student housing projects in Newfoundland or the Yukon and Northwest Territori

From December 1960, when student housing loans were first authorized, to Decemb 1969, 289 totalling $361,631,000 were approved involving the construction of 4,785 uni and 56,986 beds, and the acquisition and conversion of existing buildings to provide 2 units and 2,705 beds. The statutory limit that may be advanced for such loans $550,000,000.

*Loans for Municipal Sewage-Treatment Projects.**—During 1969, 147 loans amountin to over $50,913,000 were authorized to assist municipalities to undertake sewage-treatme projects, distributed provincially as follows:—

*Province**	*Loans*	*Amount*	*Province*	*Loans*	*Amount*
	No.	$'000		No.	$'000
Newfoundland	—	—	Ontario	50	20,305
Prince Edward Island	2	58	Manitoba	3	721
Nova Scotia	16	1,165	Saskatchewan	12	2,571
New Brunswick	5	2,887	Alberta	15	3,469
Quebec	29	8,323	British Columbia	15	11,414

From December 1960, when assistance for sewage-treatment projects was authorized, t December 1969, 1,523 loans totalling $322,578,000 were approved.

Mortgage Marketing.—Sales of NHA-insured mortgages amounted to $127,600,000 i 1969 compared with $43,000,000 in 1968. Because of heavy pressure on the market fo long-term funds, auctions were not held by the Corporation between 1966 and 1969; tota sales by the Corporation to the end of 1965 totalled $308,600,000.

Urban Renewal.—As indicated in Subsection 1, p. 833, activity under the urban renewa provisions of the National Housing Act was restricted in 1969. During the year, th Corporation approved contributions totalling $117,000 to four municipalities to undertak urban renewal studies—two in Ontario and two in Quebec. In 1968, 46 grants totallin $879,000 were approved for such studies.

Federal contributions totalling $496,000 were approved during 1969 for the preparatio of 26 urban renewal schemes, all in the Province of Quebec. Also, 20 schemes were approve for implementation supported by a federal contribution of $17,991,000. Together, thes involved the rehabilitation of 1,097 acres and the displacement of 948 families, and th estimated total cost was $45,249,000. Locations and acreages were: 13 in Quebec involvin a gross of 1,000 acres; four in Ontario of 62 acres, and three in British Columbia of 53 acres By far the largest in size was the St. Maurice project in Thetford Mines, Que. It will in

* Provincial data are gross; all others are net

volve the redevelopment of 739 acres and a federal contribution estimated at $2,750,000 with a loan to assist in the implementation of a further $1,833,000.

Public Housing.—During 1969, approval was given for 41 federal-provincial housing projects—11 in Nova Scotia, 20 in Saskatchewan, five in Alberta, two in British Columbia and three in the Northwest Territories. These projects will provide 1,070 dwellings and the federal contribution will be $12,400,000. To the end of 1969, approval had been given for 16,869 rental units under federal-provincial arrangements. Of these, 14,429 are to be subsidized at rents related to the income of tenants and the remainder will be leased at fixed rents related to dwelling size and at levels sufficient to recover capital costs and to meet operating expenses. The federal 75-p.c. share of the deficit of the subsidized units in 1968, paid in 1969, was $6,400,000.

Under arrangements with the Provinces of Nova Scotia and Prince Edward Island, assistance may be given under the National Housing Act for co-operative house-building. In 1969, projects were approved for 1,049 units in Nova Scotia, bringing the total approved since the inception of the program in 1953 to 2,637 units. Since 1960, 152 units have been approved in Prince Edward Island.

In April 1965, agreement was reached between the Federal Government and the Province of Saskatchewan for a joint program to provide housing for metis and enfranchised Indians in sparsely settled regions of northern Saskatchewan. During 1969, 74 units were approved, bringing to 168 the total number approved under this experimental program. The units are located at Air Ronge, Beauval, Buffalo Narrows, Cumberland House, Green Lake, Île à la Crosse, La Loche, Turnor Lake, Dore Lake, Pelican Narrows, Pine House, and St. Walburg. The federal contribution for 1969 was $265,000. Similar agreements have been reached with the Provinces of Manitoba and Alberta directed primarily to people of Indian origin.

Loan-Assisted Projects.—In 1969, 208 loans amounting to $196,862,000 were approved for 16,027 units: 75 in two projects in Newfoundland, 52 in three projects in Nova Scotia, 384 in 13 projects in New Brunswick, 4,132 in 44 projects in Quebec, 11,054 in 140 projects in Ontario, 76 in two projects in Manitoba, and 342 in six projects in Alberta. The estimated annual 50-p.c. federal contribution toward operating losses for the projects was $6,200,000.

Land Assembly.—Under the federal-provincial arrangements, six land assembly projects for 816 residential building lots were approved in 1967, located in Campbellton, New Brunswick; Aurora and Wallaceburg, Ontario; and Ladysmith, Masset and Sparwood, British Columbia. During 1968, 1,381 lots were approved for development and approval was also given for the acquisition and ultimate development for housing purposes of 4,685 acres of land. In 1969, 14 loans were approved, amounting to $7,551,000, to assist in the acquisition of land for future housing purposes. These were located in Corner Brook, Newfoundland; Halifax, Lower Sackville, North Preston, Port Hawkesbury and Sydney, Nova Scotia; Hearst, Kenora, Oakville, Pembroke, Waterloo Township and Woodstock, Ontario; and Edmonton and Redwater, Alberta. By far the largest project is in Edmonton. It involves a loan of $4,541,000 for the acquisition of 3,500 acres.

Subsection 3.—Housing Statistics of the 1966 Census

Because of the abbreviated nature of the 1966 Census, only two housing questions were included in the questionnaire, one relating to structural type of dwelling and the other to tenure. Tables **16** and **17** provide a 1961-to-1966 comparison of structural type and tenure of occupied dwellings for the provinces and the Census Metropolitan Areas.

Data relating to specific housing characteristics are summarized for 1951 and 1961 in the 1967 Year Book at pp. 728-729 and are detailed in Vol. II (Part 2) of the 1961 Census (Catalogue Nos. 93-523 to 93-534). Housing data in similar detail will be available from the 1971 Census.

16.—Types of Occupied Dwellings, by Province and Census Metropolitan Area, with Percentage Change, Censuses of 1961 and 1966

Province or Territory and Census Metropolitan Area	Type of Dwelling									Total Dwellings[1]		
	Single Detached			Single Attached			Apartment or Flat					
	1961	1966	Increase	1961	1966	Increase or Decrease	1961	1966	Increase	1961	1966	Increase
	No.	No.	p.c.	No.	No.	p.c.	No.	No.	p.c.	No.	No.	p.c.
Province												
Newfoundland	73,738	78,119	5.9	8,886	9,546	7.4	5,170	8,551	65.4	87,940	96,632	9.9
Prince Edward Island	19,427	19,927	2.6	2,133	2,465	15.6	2,259	2,697	19.4	23,942	25,360	5.9
Nova Scotia	134,715	138,596	2.9	14,363	13,532	−5.8	25,187	31,335	24.4	175,340	185,245	5.6
New Brunswick	95,772	102,170	6.7	10,498	9,464	−9.8	25,906	28,816	11.2	132,714	141,761	6.8
Quebec	467,716	549,282	17.4	138,373	117,501	−15.1	583,983	719,343	23.2	1,191,368	1,389,115	16.6
Ontario	1,140,653	1,232,954	8.1	170,312	185,660	9.0	324,859	453,496	39.6	1,640,750	1,876,545	14.4
Manitoba	190,171	198,562	4.4	11,367	10,723	−5.7	37,115	48,578	30.9	239,754	259,280	8.1
Saskatchewan	210,253	214,299	1.9	10,485	9,231	−12.0	22,390	34,153	52.5	245,424	260,822	6.3
Alberta	272,069	294,539	8.3	18,141	19,669	8.4	54,919	74,536	35.7	349,809	393,707	12.5
British Columbia	367,663	398,781	8.5	19,577	22,904	17.0	68,632	114,232	66.4	459,532	543,075	18.2
Yukon and Northwest Territories	6,324	6,894	9.0	798	1,059	32.7	678	682	0.6	7,920	8,931	12.8
Canada	**2,978,501**	**3,234,123**	**8.6**	**404,933**	**401,751**	**−0.8**	**1,151,098**	**1,516,419**	**31.7**	**4,554,493**	**5,180,473**	**13.7**
Metropolitan Area												
Calgary	50,802	60,420	18.9	5,173	6,039	16.7	22,132	28,150	27.2	78,396	94,941	21.1
Edmonton	61,800	70,784	14.5	5,001	6,362	27.2	21,692	32,667	50.6	89,003	110,224	23.8
Halifax	23,450	24,269	3.5	3,789	3,563	−6.0	14,880	19,397	30.4	42,366	47,692	12.6
Hamilton	76,869	83,576	8.7	6,312	6,971	10.4	21,966	32,693	48.8	105,240	123,352	17.2
Kitchener	29,688	33,880	14.1	2,407	3,231	34.2	10,038	15,892	58.3	42,174	53,037	25.8
London	33,824	37,702	11.5	2,411	3,707	53.8	14,088	18,043	28.1	50,494	59,717	18.3
Montreal	106,969	136,456	27.6	58,704	59,080	0.6	383,735	472,959	23.3	549,652	668,901	21.7
Ottawa	51,914	60,252	16.1	15,345	16,561	7.9	40,196	53,230	32.4	107,570	130,256	21.1
Quebec	23,127	31,413	35.8	10,640	5,444	−48.8	45,356	60,280	32.9	79,140	97,221	22.8
Regina	21,544	25,603	18.8	1,573	1,723	9.5	6,771	9,823	45.1	30,123	37,314	23.9
Saint John	8,854	10,600	19.7	1,855	1,644	−11.4	13,345	13,736	2.9	24,143	26,195	8.5
St. John's	9,537	10,635	11.5	4,861	4,419	−9.1	3,484	5,655	62.3	17,917	20,737	15.7
Saskatoon	19,193	21,114	10.0	1,492	1,513	1.4	5,134	10,363	101.8	25,910	33,224	28.2
Sudbury	15,182	16,292	7.3	2,690	2,745	2.0	8,363	9,471	13.2	26,255	28,510	8.6
Toronto	268,984	295,508	9.9	84,385	95,428	13.1	128,680	195,207	51.7	482,490	586,581	21.6
Vancouver	171,620	182,575	6.4	8,843	8,800	−0.5	47,630	79,802	67.5	228,596	271,956	19.0
Victoria	35,747	32,989	9.1	2,330	2,679	15.0	9,295	13,188	41.9	47,485	55,098	16.0
Windsor	40,102	42,579	6.2	3,295	3,271	−0.7	9,877	12,381	25.4	53,315	58,250	9.3
Winnipeg	90,412	97,175	7.5	6,271	5,901	−5.9	31,666	40,442	27.7	128,530	143,710	11.8

[1] Includes mobile dwellings.

17.—Tenure of Occupied Dwellings, by Province and Census Metropolitan Area, with Percentage Change, Censuses of 1961 and 1966

Province or Territory and Census Metropolitan Area	Tenure						Total Dwellings		
	Owned			Rented					
	1961	1966	Increase	1961	1966	Increase	1961	1966	Increase
	No.	No.	p.c.	No.	No.	p.c.	No.	No.	p.c.
Province									
Newfoundland	76,691	81,276	6.0	11,249	15,356	36.5	87,940	96,632	9.9
Prince Edward Island	18,958	19,641	3.6	4,984	5,719	14.7	23,942	25,360	5.9
Nova Scotia	131,405	136,460	3.8	43,935	48,785	11.0	175,340	185,245	5.6
New Brunswick	94,022	99,840	6.2	38,692	41,921	8.3	132,714	141,761	6.8
Quebec	583,981	666,007	14.0	607,387	723,108	19.1	1,191,368	1,389,115	16.6
Ontario	1,157,229	1,259,453	8.8	483,521	617,092	27.6	1,640,750	1,876,545	14.4
Manitoba	176,156	181,792	3.2	63,598	77,488	21.8	239,754	259,280	8.1
Saskatchewan	188,226	194,489	3.3	57,198	66,333	16.0	245,424	260,822	6.3
Alberta	248,537	267,246	7.5	101,272	126,461	24.9	349,809	393,707	12.5
British Columbia	326,090	359,272	10.2	133,442	183,803	37.7	459,532	543,075	18.2
Yukon and Northwest Territories	4,292	4,494	4.7	3,628	4,437	22.3	7,920	8,931	12.8
Canada	**3,005,587**	**3,269,970**	**8.8**	**1,518,906**	**1,910,503**	**23.3**	**4,554,493**	**5,180,473**	**13.7**
Metropolitan Area									
Calgary	49,623	57,265	15.4	28,773	37,676	30.9	78,396	94,941	21.1
Edmonton	57,916	67,020	15.7	31,087	43,204	39.0	89,003	110,224	23.8
Halifax	23,234	24,742	6.5	19,132	22,950	20.0	42,366	47,692	12.6
Hamilton	77,367	84,119	8.7	27,873	39,233	40.8	105,240	123,352	17.2
Kitchener	30,479	34,838	14.3	11,695	18,199	55.6	42,174	53,037	25.8
London	33,695	37,011	9.8	16,799	22,706	35.2	50,494	59,717	18.3
Montreal	179,083	219,779	22.7	370,569	449,122	21.2	549,652	668,901	21.7
Ottawa	55,569	63,974	15.1	52,001	66,282	27.5	107,570	130,256	21.1
Quebec	33,458	42,126	25.9	45,682	55,095	20.6	79,140	97,221	22.8
Regina	20,048	23,512	17.3	10,075	13,802	37.0	30,123	37,314	23.9
Saint John	10,682	12,494	17.0	13,461	13,701	1.8	24,143	26,195	8.5
St. John's	12,454	14,038	12.7	5,463	6,699	22.6	17,917	20,737	15.7
Saskatoon	18,363	20,705	12.8	7,547	12,519	65.9	25,910	33,224	28.2
Sudbury	14,807	15,601	5.4	11,448	12,909	12.8	26,255	28,510	8.6
Toronto	325,435	362,145	11.3	157,055	224,436	42.9	482,490	586,581	21.6
Vancouver	159,414	171,395	7.5	69,182	100,561	45.4	228,596	271,956	19.0
Victoria	33,893	36,653	8.1	13,592	18,445	35.7	47,485	55,098	16.0
Windsor	38,620	41,834	8.3	14,695	16,416	11.7	53,315	58,250	9.3
Winnipeg	85,831	91,007	6.0	42,699	52,703	23.4	128,530	143,710	11.8

CHAPTER XVIII.—LABOUR*

CONSPECTUS

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Section 1.—The Government in Relation to Labour

Subsection 1.—The Canada Department of Labour and the Federal Department of Manpower and Immigration

The Canada Department of Labour

The Canada Department of Labour was established in 1900 under the Conciliation Act which provided machinery to aid in preventing and settling labour disputes and required the Department to collect, compile and publish statistical and other relevant information. The Department also assumed the administration of the Fair Wages Policy adopted in the same year for the protection of workmen employed in the execution of Federal Government contracts and on works aided by grants from public funds. Since that time the Department has been charged with the administration of new legislation and has taken on new functions. Its work fell broadly into two main areas—industrial relations and manpower supply—until Jan. 1, 1966, when all manpower activities were transferred to a new Department of Manpower and Immigration (see p. 843).

The legislation now administered by the Canada Department of Labour in the industrial relations area applies to employers, workers and trade unions under federal jurisdiction. The Department is responsible for conciliation procedures in industrial disputes, the investigation of complaints of unfair labour practices, refusals to bargain and violations of legislation, the processing of applications for the certification and decertification of trade unions and the conducting of representation votes. It determines wage rates and hours of work in Federal Government contracts for construction or supplies, and promotes joint labour-management consultation. It also administers legislation to prevent discrimination

* Except as otherwise noted, this Chapter has been revised under the direction of the Deputy Minister of the Canada Department of Labour, Ottawa.

employment based on race, religion, colour or national origin and to provide for equal pay r female employees. In 1965, the Canada Labour (Standards) Code became law. The ode establishes minimum standards of wages, hours of work, vacations with pay and paid eneral holidays in industries under federal jurisdiction. To ensure safe working conditions r all employees in industries and undertakings coming under federal jurisdiction, the anada Labour (Safety) Code was passed by Parliament at the end of 1966 and was proaimed in effect Jan. 1, 1968.

Since 1947, the Canada Department of Labour has encouraged and assisted in the tablishment of labour-management committees in industry and services. With conderable expansion in this work in 1966, the service was reorganized and became a separate anch of the Department, namely, the Labour-Management Consultation Branch. There e now 2,663 (March 1970) active committees whose efforts are directed to such subjects improving work methods, safety, operating efficiency, plant maintenance, eliminating aste, maintaining good morale, promoting educational and training activities, and joint nsultation on operational changes brought about by technological change.

Research, involving regular and special surveys and analyses of economic and social ends affecting the labour force, is an important part of the Department's work carried t by the Economics and Research Branch. It studies wages and working conditions, ion organization, collective bargaining, industrial relations, labour standards and safety. hrough the Women's Bureau, it investigates the problems of women in the labour force. operates a plan of workmen's compensation for seamen on Canadian ships and arranges rkmen's compensation for Federal Government employees. In addition to the publicaon of statistical reports and the results of research studies, the Department publishes the onthly *Labour Gazette*, maintains records of labour legislation in the provinces and in other untries, operates a labour lending library and provides liaison between the International abour Organization and the federal and provincial governments.

he Department of Manpower and Immigration*

The fundamental purpose of the Department of Manpower and Immigration is to rther the growth of Canada through effective allocation and development of manpower sources in response to the changing needs of the national economy. The Department es two main channels to ensure that the supply of qualified manpower is adequate to meet e demands of the labour market: (1) counselling, placement and, where necessary, train- g and relocation of workers, and (2) introduction of new manpower through immigration.

Operations Canada.—"Operations Canada" distinguishes the Department's domes- field activities from those at head office and at offices abroad; it comprises five regional adquarters, some 360 Canada Manpower Centres and 90 Canada Immigration Centres. egional Directors-General, responsible for both manpower and immigration activities the field, report to the Assistant Deputy Minister, Operations, at head office.

The objectives of Operations Canada are: (1) to provide, through strategically located anada Manpower Centres, the facilities for an effective employment service for both rkers and employers; (2) to help workers utilize their maximum potential through coun- lling or referral to manpower development programs and obtain jobs which match their ills, capabilities and needs; (3) to assist employers in the recruitment of skilled workers, d offer advice in their manpower planning by providing up-to-date occupational and bour market information; (4) to help workers adapt to economic and technological change encouraging employers and workers to co-operatively pre-plan, and through the use of partmental training and mobility programs; (5) to provide services for the reception, ttlement and job placement of immigrants; and (6) to process international travellers d enforce the Immigration Act and Regulations within Canada, providing facilities to ocess applications by Canadians wishing to sponsor or nominate relatives.

* Prepared by the Information Service, Department of Manpower and Immigration, Ottawa.

In the 12-month period ended Mar. 31, 1970, Canada Manpower Centres assist some 723,000 persons, excluding casual workers, to find gainful employment, and referr more than 312,000 clients to full or part-time upgrading or skill-development traini courses under the Canada Manpower Training Program. In the same period, some 15,0 handicapped clients were referred to federal-provincial rehabilitation assistance program and more than 49,500 workers and trainees received moving and transportation assistan under the Canada Manpower Mobility Program.

Manpower Division.—Under the Assistant Deputy Minister, Manpower, th Division provides functional support for the manpower areas of Operations Canada; consists of three units—the Activities Development Branch, the Manpower Utilizatio Branch and the Programs Branch.

The Activities Development Branch deals with the demand side of the labour marke providing guidelines in the following main areas: development and utilization of depar mental services for employers; specialized information on industrial needs; and organiz tion of Canada Manpower Centres to give effective employment service to employer It also directs the operations of the Manpower Consultative Service which administe Federal Government assistance to industries undergoing manpower dislocations resulti from technological and other changes.

The Manpower Utilization Branch is concerned with the supply side of the labo market. It formulates policies and guidelines for the provision of employment services workers and promotes the use of Canada Manpower Centres; develops aptitude and achiev ment tests for use in counselling and selection; advises on methods of matching jobs a workers; and advises on the manpower utilization of special groups such as youths, hand capped persons, immigrants, migrants and indigenous people. The Branch administe the Vocational Rehabilitation of Disabled Persons Act under which the Federal Gover ment shares equally with participating provinces in the costs of vocational rehabilitatio services to disabled persons, and the Operation Retrieval program which is designed to p Canadian employers interested in hiring new university graduates in touch with Canadia studying abroad. The Branch carries on a continuing educational program designed t create a more favourable employment climate for middle-aged and older workers, as we as a program to facilitate and encourage the employment of high school and universit students during the summer months.

The Programs Branch deals with the major programs that facilitate the matching labour market supply and demand. It administers the Canada Manpower Training Pr gram which provides for the training or retraining of adults in schools and industry, a the Canada Manpower Mobility Program which facilitates the movement of workers t areas of job opportunity.

Immigration Division.—Under the Assistant Deputy Minister, Immigration, th Home Service Branch of the Division provides procedural guidelines for field operations Canada relating to admission of immigrants and non-immigrants, apprehension of perso who contravene Canadian laws after being admitted or gaining illegal entry, and remov from the country of those liable to deportation.

Subsection 2.—Federal Labour Legislation and Provincial Labour Legislation

Federal Labour Legislation*

Fair Wages Policy.—The Fair Wages Policy applying to all Federal Governme contracts was first set forth in a Resolution of the House of Commons (1900) and lat incorporated in an Order in Council and amended from time to time. Wages and hou

* The Act establishing the Canada Labour (Safety) Code (SC 1966-67, c. 62), proclaimed in effect Jan. 1, 196 provides for the consolidation, under the title "Canada Labour Code", of the Acts described under this headin with the exception of the Fair Wages and Hours of Labour Act and the Fair Wages Policy Order.

contracts for construction are now regulated by the Fair Wages and Hours of Labour t (RSC 1952, c. 108), as amended by an Act to amend the Fair Wages and Hours of bour Act, effective Apr. 1, 1967 (RSC 1967, c. 24), and by the Fair Wages and Hours Labour Regulations. Hours of work on construction contracts are limited to eight lay and 48 a week, except in exceptional circumstances approved by the Minister or in :h cases as the Governor in Council may prescribe; hours worked in excess of eight in lay or 40 in a week must be paid for at an overtime rate at least equal to one and one lf times the rates required under the contract; wages to be paid are those current for e type of work in the district or, if there are no current rates, fair and reasonable rates determined by the Minister of Labour; in no case shall the rates be less than the minimum urly rate prescribed by or pursuant to the Canada Labour (Standards) Code.

Wages and hours of work on contracts for equipment and supplies are regulated by der in Council PC 1954-2029. The hours of such work must be those fixed by the stom of the trade in the district where the work is performed, or fair and reasonable urs. The wages must be current or fair and reasonable but in no event shall they be s than those established by statute or regulation of the province in which the work is ng performed.

The Fair Wages and Hours of Labour Regulations and Order in Council PC 1954-2029 th contain a clause prohibiting discrimination against any person in matters of em- yment because of that person's race, national origin, colour or religion, or because he s made a complaint or given information with respect to such alleged discrimination.

The Industrial Relations and Disputes Investigation Act.—This legislation came o effect by proclamation on Sept. 1, 1948, revoking the Wartime Labour Relations Regu- ions in effect since March 1944 and repealing the Industrial Disputes Investigation Act ich had been in force from 1907 until suspended by the Wartime Regulations in 1944. e Act protects proceedings commenced and decisions, orders and certifications made der the wartime legislation in so far as these involve services authorized by the Act.

The Act applies only to industries within federal jurisdiction, viz., navigation, shipping, erprovincial railways, canals, telegraphs, steamship lines and ferries, both international d interprovincial, aerodromes and air transportation, radio broadcasting stations, and rks declared by Parliament to be for the general advantage of Canada or of two or more ovinces. However, the Act provides that provincial authorities if they so desire may ct similar legislation for application to employees within provincial jurisdiction and ke mutually satisfactory arrangements with the Federal Government for the admini- ation of such legislation by the federal authorities.

In general, the Act in its important features provides that employees and employers ll have the right to organize and bargain collectively and that trade unions may be tified as bargaining agents for employee groups. Trade unions and employers are uired, upon notice, to bargain collectively in good faith. The Act provides for invoking lective bargaining negotiations and for the mediation of conciliation officers and con- ation boards in reaching collective agreements. Employees may change bargaining nts at times under conditions specified in the Act, which also prescribes conditions ecting the duration and renewal of collective agreements. Collective agreements are uired to contain provision for the arbitration of disputes concerning the meaning or lation of such agreements and, where such provision is lacking, application may be made its establishment. The Act prohibits unfair labour practices, i.e., the interference with domination of trade unions by employers or interference, discrimination and coercion rade union activity. The conditions that must be observed prior to strike and lockout ion are set down in the Act. Industrial inquiry commissions may be appointed to in- tigate industrial matters or disputes. The Minister of Labour is charged with the ministration of the Act and is directly responsible for the provisions affecting the appoint- nt of conciliation officers, conciliation boards, industrial inquiry commissions, consent to secute, and complaints that the Act has been violated or that a party has failed to

bargain in good faith. The Canada Labour Relations Board administers provisions c cerning the certification of bargaining agents and the writing of a procedure into a collect agreement for the final settlement of disputes concerning the meaning or violation of s agreement.

Detailed statistics concerning activities under the Act may be found in the Ann Report of the Canada Department of Labour.

Canada Fair Employment Practices Act.—This Act, which came into effect July 1, 1953, prohibits discrimination in employment based on race, colour, religion national origin. It applies only to industries within federal jurisdiction—those covered the Industrial Relations and Disputes Investigation Act (see above). This law prohib acts of discrimination by employers; discrimination by trade unions in regard to memb ship or employment; the use by employers of employment agencies that practise crimination; and the use of advertisements or inquiries in connection with employm that express, directly or indirectly, any limitation, specification or preference as to ra colour, religion or national origin.

Female Employees Equal Pay Act.—This Act came into effect on Oct. 1, 1956 a applies to employers and employees engaged in works, undertakings or businesses comi within federal jurisdiction. The Act, in its principal provision, prohibits an emplo from employing a female for any work at a rate of pay that is less than the rate at wh a male is employed by that employer for identical or substantially identical work.

Canada Labour (Standards) Code.—This Act received Royal Assent on Mar. 1965 when the administration and general provisions of Part V came into effect. The A provides, in Parts I to IV which came into force on July 1, 1965, minimum standa with respect to hours of work, minimum wages, annual vacations and general holidays industries under federal jurisdiction; the Annual Vacations Act 1958 was repealed.

The standard hours of work are eight a day and 40 a week, with maximum hours 48 a week. Overtime pay at not less than time-and-one-half is required for all ho worked in excess of the standard hours. Permits are required in order to work more th 48 hours a week. Where the nature of the work necessitates irregular distribution hours of work, the hours may be averaged over a period of two weeks or more.

The minimum wage is $1.65 an hour for all persons 17 years of age or over and t minimum wage for persons under 17 years of age is $1.40 an hour. Special rates may set for persons receiving on-the-job training and for disabled or handicapped persons.

Employees are entitled to a two-week vacation with pay after one year of employme with vacation pay calculated at 4 p.c. of wages. The general holidays are eight in numb and every employee is entitled to a holiday with pay on each of them, or substitutes them. Pursuant to an amendment to Part IV of the Code, the Multi-employer E ployment (Longshoring) Regulations have been passed to provide for the granting pay in lieu of general holidays to longshoremen in multi-employer employment who p viously could not qualify for general holiday benefits because they did not have sufficie employment with one employer.

The Code has special and transitional provisions. Any person may make a submissi (under Sect. 51) for deferment or suspension of Part I (Hours of Work). The Minister m grant deferment or suspension where it can be shown that the application of Part I is would be prejudicial to the interests of the employees or detrimental to the operation the business. The Minister's order to defer or suspend may be for a period up to but r exceeding 18 months from the date of the order, and the order may or may not cont conditions on hours. A further deferment or suspension may be made by the Gover in Council but only after there has been an inquiry, and the order of the Governor Council must contain conditions on hours of work. Regulations have been enacted carry out the purposes of the Code.

Canada Labour (Safety) Code.—This Code, which received Royal Assent in late 1966 and was proclaimed in effect as of Jan. 1, 1968, is the first general safety legislation to be passed by the Parliament of Canada. Its primary purpose is to ensure safe working conditions for all employees in industries and undertakings under federal jurisdiction. The main features of the Code are that: (1) it provides for all the elements of a complete industrial safety program; (2) it sets out the general obligation of employers and employees to carry out their duties in a safe manner and authorizes the making of regulations for dealing with problems of occupational safety; (3) it does not override but complements other federal laws and provincial legislation, thus strengthening the safety movement; (4) it authorizes the use of advisory committees and special task forces to assist in developing the program, all to be done under continuous consultation among federal and provincial government departments, industry and organized labour; and (5) it provides for research into causes and prevention of accidents and for an extended program of safety education.

Provincial Labour Legislation

Because of the authority given by the British North America Act to the provincial legislatures to make laws in relation to local works and undertakings and in relation to property and civil rights in the province, power to enact labour legislation is largely the prerogative of the provinces. Since it imposes conditions on the rights of the employer and employee to enter into a contract of employment, labour legislation is, generally speaking, law in relation to civil rights. Under this authority, the provincial legislatures have enacted a large body of legislation affecting the employment relationship in such fields as working hours, minimum wages, the physical conditions of workplaces, apprenticeship and training, wage payment and wage collection, labour-management relations, workmen's compensation and other matters. In each province a department of labour or department of labour and manpower (the designations vary) is charged with the administration of labour laws. Legislation for the protection of miners is administered by departments dealing with mines. The workmen's compensation law in each province is administered by a workmen's compensation board appointed by the Lieutenant-Governor in Council.

Minimum Wages.—As a means of ensuring adequate living standards for workers, all provinces have enacted minimum wage legislation. These laws vest in a minimum-wage-fixing board or the Lieutenant-Governor in Council authority to establish minimum wages for employees. In most provinces, minimum wage orders now cover almost all employment except farm labour and domestic service. Minimum rates set by the orders apply throughout the province except in Nova Scotia, Quebec and Saskatchewan. Both Nova Scotia and Quebec are divided into two zones for minimum wage-setting purposes. In Saskatchewan, minimum rates vary between urban and rural areas. Except in Newfoundland, Nova Scotia and Prince Edward Island, the same rates are set for both sexes.

Hours of Work.—Five provinces have general hours-of-work laws. Those of Ontario, Alberta and British Columbia set limits on daily and weekly hours of work. Hours are limited in Alberta and British Columbia to eight a day and 44 a week, and in Ontario to eight a day and 48 a week. The Ontario Act requires, with some exceptions, that one and one half times the regular rate be paid for work done, under permit, beyond the 48-hour limit. The Manitoba and Saskatchewan Acts do not limit daily and weekly hours but require the payment of one and one half times the regular rate if work is continued after specified limits. The Manitoba law requires payment of the overtime rate after eight and 48 hours for men and eight and 44 hours for women. The Saskatchewan Act requires payment of the overtime rate after eight and 44 hours. Some exceptions are provided for in all five Acts.

Regulation of Wages and Hours in Certain Industries.—Apart from general hours-of-work laws, other statutes regulate working hours in some industries. Industrial standards legislation is in effect in Newfoundland, Prince Edward Island, Nova Scotia,

New Brunswick, Ontario, Saskatchewan and Alberta. These laws provide that a schedul of wage rates and hours of work agreed upon by a representative group of employees an employers in an industry or trade may, upon approval by the government, be given statu tory effect by Order in Council, with the result that such wage rates and hours become th minimum terms of employment for the entire industry or trade in the area. An advisor committee, usually equally representative of employers and employees, is established t assist in enforcing a schedule. This legislation is used fairly extensively in the buildin trades, the clothing industries, barbering and a few other industries. In Newfoundlan Nova Scotia and New Brunswick, schedules have been issued only for certain constructio trades in some areas. In Ontario, schedules for the garment trades, the fur industry an the hard furniture industry apply thoughout the province and a substantial number c schedules apply to various construction trades and to barbering in specified areas.

Under the Quebec Collective Agreement Decrees Act, certain terms of a collectiv agreement, including those dealing with hours and wages, may be made binding on a employers and employees in the industry concerned in a defined area, provided the partie to the agreement represent a sufficient proportion of the industry. The standards mad binding under this procedure are contained in a decree, which has the force of law. Ap proximately 85 decrees applying to the garment trades, barbering and hairdressing, com mercial establishments, garages and service stations, and other industries and services ar in effect. Of these decrees, 14 apply throughout the province. Working conditions in th construction industry are governed by decrees under a separate Act, the Construction In dustry Labour Relations Act, 1968.

The Construction Industry Wages Act in Manitoba, which applies to both private an public construction work, provides for the setting of minimum rates of wages and maximun hours of work at regular rates for employees in the construction industry, on the recom mendations of a board equally representative of employers and employees, with a publi member as chairman. Under this Act, annual schedules set the regular work week an hourly rates of wages for various classifications of workers in the heavy construction in dustry, in the Greater Winnipeg building construction industry, and in rural buildin construction.

Annual Vacations and Public Holidays.—All provinces have annual vacation legislation applicable to most industries. In Prince Edward Island and New Brunswick workers are entitled to a vacation of one week after a year of service; in Ontario, worker are entitled to a vacation of one week after each of the first three years of employment, an of two weeks after the fourth and each subsequent year. In Nova Scotia, Quebec, New foundland and the four western provinces, the annual paid vacation required by law is tw weeks after a year of service and, in Saskatchewan, three weeks after five years of service.

Six provinces—Alberta, British Columbia, Manitoba, Nova Scotia, Ontario an Saskatchewan—have enacted legislation of general application dealing with public holi days. The number of holidays named varies from five to eight, and the provisions fo payment also vary.

Anti-discrimination Laws.—All provinces have adopted fair employment practice laws forbidding discrimination in hiring and conditions of employment and in trade unio membership on grounds of race, colour, religion or national origin, and on grounds of socia origin in Newfoundland and Quebec, and political opinion in Newfoundland. The Britis Columbia, Newfoundland and Quebec Acts also forbid discrimination in these areas o grounds of sex. In addition, in British Columbia, Ontario and Newfoundland, discrimina tion in employment and trade union membership on grounds of age is prohibited. Nin provinces have provisions in separate equal pay Acts or in human rights or labour standard legislation that forbid discrimination in rates of pay solely on the basis of sex. Quebe does not have equal pay legislation but, as indicated above, forbids discrimination in em ployment on the basis of sex.

Accident Prevention.—Factory or industrial safety Acts in most provinces establish safeguards for the protection of the health and safety of workers in factories and other workplaces with respect to such matters as sanitation, hearing, lighting, ventilation and the guarding of dangerous machinery. Long-established laws regulating the design, construction, installation and operation of mechanical equipment, such as boilers and pressure vessels, elevators and lifts and electrical installations, have been revised in recent years in line with technological changes, and legal standards have been set in new fields involving hazards to workers and the public, such as the use of gas- and oil-burning equipment. This legislation also prescribes standards of qualification for workers who install, operate or service such equipment. Laws requiring safety standards to be observed in construction and excavation work are in force in most provinces.

Labour Relations.—In all provinces, there is legislation similar in principle to the Federal Industrial Relations and Disputes Investigation Act, designed to establish harmonious relations between employers and employees and to facilitate the settlement of industrial disputes. These laws guarantee freedom of association and the right to organize, establish machinery (labour relations boards or other administrative machinery) for the certification of a trade union as the exclusive bargaining agent of an appropriate unit of employees, and require an employer to bargain with the certified trade union representing his employees. Except in Saskatchewan, the laws require the parties to comply with the conciliation or mediation procedures laid down in the legislation before a strike or lockout may legally take place, and they also provide that every collective agreement must contain provisions for the settlement of disputes arising out of the agreement, and prohibit strikes and lockouts while an agreement is in effect. All prohibit defined unfair labour practices and prescribe penalties. In most provinces, certain classes of employees who are engaged in essential services, such as policemen and firemen, are forbidden to strike and, in lieu of the right to strike, have recourse to final and binding arbitration. There are provisions relating to hospital disputes in six provinces.

Certification of Qualified Tradesmen.—All provinces have apprenticeship laws providing for an organized procedure of on-the-job training and school instruction in designated skilled trades, and statutory provision is made in most provinces for the issuing of certificates of qualification, on application, to qualified tradesmen in certain trades. In some provinces, legislation is in effect making it mandatory for certain classes of tradesmen to hold a certificate of competency.

Changes in 1969.*—In the field of *labour relations*, amendments to the Quebec Labour Code in 1969 set a precedent in the administration of labour relations in North America. The Quebec Labour Relations Board was abolished and its functions assigned to civil servants (designated as investigators and investigation commissioners acting under the authority of a chief investigation commissioner, all of whom are officials of the Department of Labour and Manpower) and a Labour Court. The role of the investigator, which is mainly administrative, is to issue certification in clear-cut cases; the investigation commissioners handle the more complex cases and make extensive inquiries. The Labour Court has exclusive and final jurisdiction to hear appeal cases arising out of the decisions of the investigation commissioners. In addition, all penal prosecutions under the Code must, in the first instance, be tried in the Labour Court. Another amendment to the Code removed "recognized" associations from the protection of the Code, thus permitting only certified unions to make binding collective agreements.

The Quebec Construction Industry Labour Relations Act, in force from Dec. 18, 1968, established a collective bargaining system adapted to the particular needs of the industry. Certification was abolished. Associations of employers and employees recognized by the Act as representative are now required to negotiate a collective agreement leading to the adoption of a decree that will determine working conditions. Bargaining is conducted by region for the entire industry.

* For 1969 changes in workmen's compensation legislation, see p. 852.

Several provinces enacted or amended labour relations legislation in the public sector. In New Brunswick, the Public Service Labour Relations Act, which went into effect on Dec. 1, 1969, gave public servants collective bargaining rights, including the right to strike. Nova Scotia brought municipal policemen under the Trade Union Act, and Ontario made binding arbitration procedures governing hospital employees applicable to a wider range of institutions, such as nursing homes.

Amendments were made to several *minimum wage* Acts and the general minimum wage rates in six provinces were increased. New Brunswick brought part-time employees within the scope of the Minimum Wage Act. Prince Edward Island amended the definition of "wages" in its Minimum Wage Acts to exclude tips. Saskatchewan deleted from its legislation the section setting out the criteria to be followed by the Minimum Wage Board in establishing the minimum wage; only the Manitoba and Quebec Acts now contain any such criteria.

The highest general minimum wage rates set in 1969 were provided for in Alberta: $1.40 an hour, effective Apr. 1, 1970, and $1.55 an hour, effective Oct. 1, 1970.

The minimum rates in effect on July 1, 1970, for experienced adult workers in certain cities are shown in Table 1.

1.—Minimum Wage Rates for Experienced Adult Workers in Certain Cities, by Sex, July 1, 1970

Item, Type of Establishment and Sex		St. John's, Nfld.	Charlottetown, P.E.I.	Halifax, N.S.	Saint John, N.B.	Montreal, Que.	Toronto, Ont.	Winnipeg, Man.	Regina, Sask.	Edmonton, Alta.	Vancouver B.C.
Maximum hours per week to which the rates apply.	M.	48[1]	—	48	48	48	48[3]	48	44	44	40
	F.	48[1]	48[2]	48	48	48	48[3]	44	44	44	40
		$ an hour	$ an hour	$ an hour	$ an hour	$ an hour	$ an hour	$ an hour	$ an hour	$ an hour	$ an hour
Factories	M.	1.25	1.25[4]	1.25	1.15	1.35	1.30	1.35	1.25	1.40	1.50
	F.	1.00	0.95	1.00	1.15	1.35	1.30	1.35	1.25	1.40	1.50
Laundries	M.	1.25	1.25	1.25	1.15	1.20	1.30	1.35	1.25	1.40	1.50
	F.	1.00	0.95	1.00	1.15	1.20	1.30	1.35	1.25	1.40	1.50
Shops	M.	1.25	1.25	1.25	1.15	1.35	1.30	1.35	1.25	1.40	1.50
	F.	1.00	0.95	1.00	1.15	1.35	1.30	1.35	1.25	1.40	1.50
Hotels and restaurants	M.	1.25	1.25	1.25	1.15	1.15	1.30	1.35	1.25	1.40	1.50
	F.	1.00	0.95	1.00	1.15	1.15	1.30	1.35	1.25	1.40	1.50
Beauty parlours	M.	1.25	1.25	1.10	1.15	1.35	1.30	1.35	1.25	1.40	1.60
	F.	1.00	0.95	1.10	1.15	1.35	1.30	1.35	1.25	1.40	1.60
Theatres and amusement places	M.	1.25	1.25	1.25	1.15	1.20	1.30	1.35	1.25	1.40	1.50
	F.	1.00	0.95	1.00	1.15	1.20	1.30	1.35	1.25	1.40	1.50
Offices	M.	1.25	1.25	1.25	1.15	1.35	1.30	1.35	1.25	1.40	1.50
	F.	1.00	0.95	1.00	1.15	1.35	1.30	1.35	1.25	1.40	1.50

[1] 40 hours in shops. [2] 60 hours in food processing industry. [3] 55 hours for seasonal workers in the hotel, motel, tourist resort, restaurant and tavern industry; 60 hours for seasonal workers in fruit and vegetable processing. [4] $1.10 an hour for male workers in food processing plants.

Newfoundland enacted *annual vacations* legislation—the Annual Vacations with Pay Act—requiring employers to grant their employees a vacation with pay of at least two weeks after every completed year of employment, provided the employee has worked at least 90 p.c. of the regular working hours in any continuous 12-month period. Vacation pay is 4 p.c. of total wages for the year. A new *weekly rest* law in Newfoundland—the Weekly Day of Rest Act—stipulates that employees must be granted a rest period of at least 24 consecutive hours in every seven days, wherever possible on Sunday. One month's notice of

mination of employment is required of both employers and employees under another 1969 actment in Newfoundland—the Employment (Notice of Termination) Act.

Newfoundland also adopted its first *anti-discrimination* legislation, a comprehensive uman Rights Code (to come into effect on proclamation) dealing with public accom-odation, fair employment practices (including trade union membership) and equal pay. scrimination is prohibited on the usual grounds of race, religion, religious creed, colour ethnic or national origin, with the addition of public opinion and social origin. In em-yment and trade union membership, discrimination is also prohibited on grounds of sex d on grounds of age (between 45 and 65). Under the equal pay provisions of the Code, emale employee must be paid at the same rate of pay as a male employee for the same rk done in the same establishment.

In British Columbia, the Acts relating to fair employment practices, fair accommoda-n practices and equal pay were embodied in one statute—the Human Rights Act—and a uman Rights Commission was established to assist in the enforcement of the Act. The w Act removed the exemption of employers with fewer than five employees and added as a ground of discrimination which is prohibited in employment, or in conditions of ployment, and in trade union membership. The Nova Scotia Human Rights Act was ised extensively and strengthened, and the equal pay provisions were removed and acted as a separate Act.

Under a new Manpower Vocational Training and Qualification Act in Quebec, dis-mination is forbidden, with some qualifications, on grounds of race, sex, religion, national raction or ethnic origin in selecting candidates for apprenticeship or vocational training, carrying out such training programs, or in examinations for certificates of qualification.

In the *industrial safety* field, Newfoundland enacted an Elevators Act requiring annual pection and prior approval of plans for installation and major alteration of elevators and er lifting devices within the jurisdiction of the province. British Columbia completely ised its Coal Mines Act in the light of modern techniques. In Nova Scotia, the Work-n's Compensation Board assumed responsibility for accident prevention, replacing an ployers' association.

Comprehensive new accident prevention regulations were issued in Newfoundland, katchewan and Alberta by the Workmen's Compensation Boards, and industrial safety ulations were issued by the Nova Scotia Department of Labour under the Industrial ety Act.

Several provinces also revised safety regulations applying in specific industries and des, notably in construction in Nova Scotia and Ontario. Revised regulations under the tario Construction Safety Act went into effect on July 22, 1969.

Workmen's Compensation.—In all provinces legislation is in force providing for ment of compensation to workmen who are injured by accident arising out of and in the rse of their employment or who are disabled as a result of a specified industrial disease. be entitled to benefits, a workman must be employed in an industry covered by the Act the time of the injury. Compensation is not payable, however, where the disability s less than a stated number of days (varying from one to four in the provincial Acts), f the injury is due to the workman's own misconduct. A workman who is entitled to mpensation has no right of action against his employer for injury sustained during em-yment.

The Acts provide for a compulsory system of collective liability on the part of em-yers. Industries covered are divided into classes or groups, according to hazard. ployers are required to contribute to the Accident Fund at a rate fixed in accordance h the accident experience of the class or group. Each class is liable for the costs of all idents occurring in that class.

The laws apply to enumerated employments but the range of industries covered by h Act is very wide. The principal exceptions are farm workers (who are not covered ept in Ontario), domestic servants, casual workers, employees of financial, insurance

and professional undertakings, employees of non-profit religious or charitable organizatio and workers in certain service industries in most provinces, for example, barber shops a beauty parlours. Small undertakings, i.e., those with fewer than a specified number employees, are exempted from the Act in some provinces. Excluded employments n generally be brought under the Act on the voluntary application of the employer.

Benefits for disability are based on 75 p.c. of earnings, subject to an annual ceili Where disability is permanent, a life pension is paid, irrespective of future earnings. M ical benefits are provided without limitation, regardless of a waiting period, and rehabili tion services are available where necessary. Where death results from an employm injury, fixed monthly payments are made to dependants.

A federal Act provides for compensation for accidents to Federal Government e ployees according to the scale of benefits provided by the Act of the province in which employee is usually employed. Seamen who are not under a provincial Workmen's Co pensation Act are entitled to compensation under the federal Merchant Seamen Comp sation Act.

Changes in 1969.—Amendments were made to nine of the provincial Workmen's Co pensation Acts. One of the most significant developments was that Quebec became second province, after British Columbia, to tie compensation benefits to the cost of livi As of Jan. 1, 1970, death and disability benefits are to be adjusted yearly in accordance w the increase in the pension index established under the Quebec Pension Plan.

The maximum annual earnings on which compensation may be paid was raised fr $5,000 to $6,000 in Newfoundland and Prince Edward Island, from $5,500 to $6,000 in N Brunswick, and from $5,600 to $6,600 in Alberta. The waiting period was reduced fr three days to one day in Quebec.

In Ontario and Alberta, a minimum pension of $175 a month was established for wo ers who become permanently and totally disabled. The increased rate (in Ontario, fr $150 a month or earnings, if less, subject to a minimum of $100 on earnings; in Albe from $35 a week or earnings, if less) was made applicable to pensions already being paid well as to those payable in the future.

The minimum weekly payment for temporary total disability was increased by $5 New Brunswick and Alberta (to $30 and $40, respectively) and by $10 in Ontario and Ma toba (to $40 and $35, respectively). In British Columbia, as a result of the rise in consumer price index in 1968, the minimum weekly payment for temporary total disabil was increased, beginning Jan. 1, 1969, by 4.04 p.c. to $33.78, or average earnings if l from a minimum in 1968 of $32.47. Three provinces—Prince Edward Island, Quebec a Alberta—amended provisions dealing with benefits payable in case of a recurrence of ability from a compensable accident.

Dependants' allowances in British Columbia were increased, in line with a rise in cost of living index, by 4.04 p.c., effective Jan. 1, 1969. A number of other provinces creased benefits payable to dependent widows and children.

New groups of workers brought under the Acts of several provinces included: hospi workers in Prince Edward Island; employees of taverns and lounges in Nova Scotia; fishing industry and also persons assisting a peace officer in making an arrest or in p serving the peace in New Brunswick; deep-sea fishing enterprises and some coastal fish men in Quebec, and workers engaged in janitorial services as a business in Alberta.

Section 2.—The Labour Force*

Since 1946, reliable information for analysis of employment in Canada, at the natio level and for the five major regions, has been provided through a labour force surv Between November 1945 and November 1952, quarterly surveys were undertaken and si then the survey has been carried out on a monthly basis. The sample used in the surv

* Prepared in the Special Surveys Division, Dominion Bureau of Statistics.

s been designed to represent all persons in the population, 14 years of age or over, residing Canada, with the exception of residents of the Yukon and Northwest Territories, Indians ing on reserves, inmates of institutions and members of the Armed Forces. Interviews e carried out in approximately 30,000 households chosen by area sampling methods across e country.*

In the labour force survey, persons are classified on the basis of their activity during e week prior to the survey interview week. This week is called the reference week. The in divisions in the classification are:—

Labour Force.—The civilian labour force is composed of that portion of the civilian non-institutional population, 14 years of age or over who, during the reference week, were employed or unemployed.

Employed.—The employed include all persons who, during the reference week: (a) did any work for pay or profit; (b) did any work which contributed to the running of a farm or business operated by a related member of the household; (c) had a job, but were not at work, because of bad weather, illness, industrial dispute or vacation, or because they were taking time off for other reasons. Persons who had jobs but did not work during the reference week and who also looked for work are included in the unemployed as persons without work and seeking work.

Unemployed.—The unemployed include all persons who, through the reference week: (a) were without work and seeking work, i.e., did not work during the reference week and were looking for work, or would have been looking for work except that they were temporarily ill, were on indefinite or prolonged layoff, or believed no suitable work was available in the community; (b) were temporarily laid off for the full week, i.e., were waiting to be called back to a job from which they had been laid off for less than 30 days.

Not in the Labour Force.—Those not in the labour force include all civilians 14 years of age or over (exclusive of institutional population) who are not classified as employed or unemployed. This category includes those: going to school; keeping house; too old or otherwise unable to work; and voluntarily idle or retired. Housewives, students and others who worked part-time are classified as employed or, if they looked for work, as unemployed.

The estimates derived from the labour force survey, which are based on a sample of seholds, are subject to sampling error. Somewhat different figures might be obtained complete census were taken and this difference is called the sampling error of the estites. In the design and processing of the labour force survey, extensive efforts are made minimize the sampling error; in general, the percentage of error tends to decrease as the of the estimate increases. A statistical measure of the sampling error is given in DBS nthly publication *The Labour Force* (Catalogue No. 71-001).

The Labour Force, 1970.—Data for the first nine months of 1970 indicate an increase he Canadian labour force of 2.4 p.c. to a level of 8,372,000, compared with the same iod in 1969. This increase consisted of a 3.2-p.c. (82,000) rise in female participants a 2.0-p.c. (112,000) increase for males. The over-all participation rate, which is the o of the labour force to the population of working age (14+ years), remained at about same record high level achieved in 1969. Employment rose by 86,000 (1.1 p.c.) to 1,000 as the result of a 2.3-p.c. (58,000) increase among females employed and a 0.5- (28,000) increase among males. Of the industry divisions, service registered the est gain (5.2 p.c. or 124,000) and agriculture and manufacturing the largest declines p.c. or 27,000 and 1.6 p.c. or 30,000, respectively). Regionally, most of the increases mployed occurred in Ontario (53,000) and British Columbia (21,000). Total unemyment rose by 107,000 to 500,000 over the same period a year earlier. Of this total, ales unemployed increased by 24,000 to 119,000 and males unemployed increased by 00 to 381,000. All of the regions except the Atlantic, which reported no change, wed substantial increases in the number of unemployed. The national unemployment , at 6.0, for the first nine months of 1970 was up from the level of 4.8 recorded for the e period in 1969.

* A comprehensive description of the survey is given in DBS publication *Canadian Labour Force Survey—odology* (Catalogue No. 71-504).

Characteristics of the Civilian Labour Force, 1960-69.—The period 1960-69 w characterized by rapid expansion of the Canadian labour force, which increased by 1,750,0 or 27.3 p.c. The greatest rise took place in the last five years of the period, when the annu rate of increase averaged 3.3 p.c. During the decade, the number of women in the labo force increased by 945,000 or 57.0 p.c., an advance that was greater, both absolutely a relatively, than the increase of 806,000 or 17.0 p.c. experienced by men. The participati rate reached a record high of 55.8 in 1969 because of the increased participation of wom and despite the continued decline of male participation rate which reached a record low 76.6 compared with the 1960 level of 80.7. This decline can be attributed largely to r duced participation among younger and older men; the rate for those in the 14-19 a group dropped from 42.9 to 37.9, for those in the 20-24 age group from 91.1 to 84.2, and tho in the 65 or over group from 30.3 to 23.6. These declines were caused primarily by tv factors—the increase in the number of young men delaying their entrance into the labo force by acquiring additional years of education, and the increased use of both governme and private pension plans which tend to remove the former delay of retirement caused financial need.

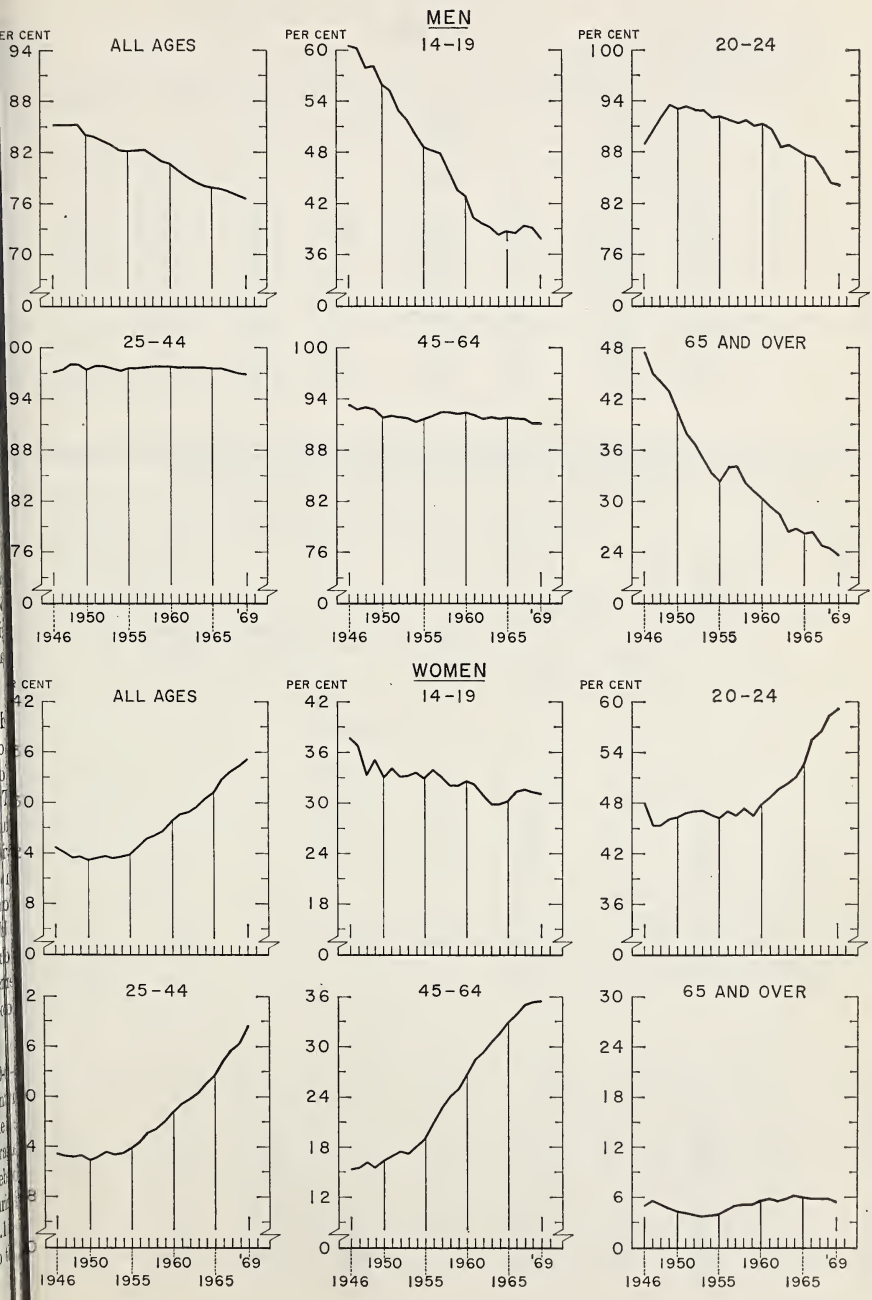
As already stated, the decline of the male participation rate was more than offset duri the 1960-69 decade by a strong increase in the female rate, which rose from 27.9 to 35 Increases occurred in all age groups from 20 to 64; the rate for women in the 20-24 a group rose from 48.0 to 59.3, for those in the 25-44 age group from 28.4 to 38.5, and f those in the 45-64 group from 26.6 to 35.5. This increase was very largely attributable the greater number of married women remaining in or re-entering the labour force; in 19 56 p.c. of the female labour force was married compared with 45 p.c. a decade earlier. T participation rate for married women rose during that period from 19.1 to 31.2.

Total employment in 1969 was higher than in 1960 by 1,815,000, or 30.4 p.c.; ma employment increased by 904,000 or 20.7 p.c., and female employment by 911,000 or 57 p.c. All regions of the country shared in the increase. The gain in the Atlantic regi was 23.0 p.c., in Quebec 30.1 p.c., in Ontario 30.5 p.c., in the Prairie region 22.7 p.c., a in British Columbia 54.1 p.c.

In 1961, two new systems of coding industry and occupation data were introduced the 1960 standard industrial classification and the 1961 Census occupational classificatio Data prior to 1961 were coded according to the old classification system and are therefo not comparable; for this reason, Tables 4 and 5 cover only the period 1961 to 1969. T most notable features concerning the changes in the distribution of employment by indu trial group (Table 4) during the 1961-69 period were the tremendous growth of the servi industries whose share of the employed rose from 25.3 p.c. to 30.7 p.c. (an actual growth 858,000 or 56 p.c.), and the decline in the share of the employed held by agriculture fro 11.2 p.c. to 6.9 p.c. (an actual decline of 146,000 or 21 p.c.). These trends are confirmed the occupation data of Table 5, which shows that the proportion of professional and tec nical employed rose from 9.9 p.c. to 13.3 p.c. during the period, service and recreation em ployed increased from 10.9 p.c. to 12.0 p.c., while farmers and farm workers declined fro 11.3 p.c. to 6.9 p.c.

There was an uneven regional pattern of unemployment levels throughout the 1960- decade. Expressed as a percentage of the labour force, unemployment in the Atlan region, Quebec and British Columbia was consistently above the national average, while Ontario and the Prairie region, unemployment rates were lower. In 1969, the avera national unemployment rate was 4.7 and the rates for the regions were: Atlantic 7.5, Queb 6.9, Ontario 3.1, Prairie 2.9, and British Columbia 5.0. Unemployment in Canada duri the 1960-69 decade followed a cyclical pattern. The rate of 7.0 in 1960 increased to 7.1 1961, declined steadily from 1962 to 1966 to a low of 3.6, and after 1966 increased to t 1969 level of 4.7. The average unemployment rate for the 10-year period was 5.1.

PARTICIPATION RATES BY AGE GROUP AND SEX, ANNUAL AVERAGE, 1946-69



2.—Estimates of the Civilian Labour Force and its Main Components, Annual Averages, 1960-69

Year	Civilian Population (14 years of age or over)	Civilian Labour Force (14 years of age or over)							Persons not in Labour Force (14 years of age or over)
		Employed					Unemployed	Total Labour Force	
		Non-agriculture			Agriculture	Total (employed)			
		Paid Workers	Other	Total (non-agriculture)					
	'000	'000	'000	'000	'000	'000	'000	'000	'00
1960	11,831	4,732	551	5,282	683	5,965	446	6,411	5,
1961	12,053	4,799	575	5,374	681	6,055	466	6,521	5,
1962	12,280	4,980	585	5,565	660	6,225	390	6,615	5,
1963	12,536	5,138	588	5,726	649	6,375	374	6,748	5,
1964	12,817	5,368	611	5,979	630	6,609	324	6,933	5,
1965	13,128	5,655	613	6,268	594	6,862	280	7,141	5,
1966	13,475	5,999	610	6,609	544	7,152	267	7,420	6,
1967	13,874	6,206	614	6,820	559	7,379	315	7,694	6,
1968	14,264	6,391	601	6,992	546	7,537	382	7,919	6,
1969	14,638	6,625	620	7,245	535	7,780	382	8,162	6,

3.—Percentage Distribution of the Population 14 Years of Age or Over in the Labour F and Non-labour Force Categories, by Sex, 1960-69

Year	Population (14 years of age or over)	Percentage Distribution of the Population 14 Years of Age or Over							
		Labour Force				Not in Labour Force			
		Employed		Unemployed	Total	Women Keeping House	Persons Going to School	Other	To
		Agriculture	Non-agriculture						
		Males							
	'000	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.
1960	5,890	10.7	63.4	6.6	80.7	...	7.5	11.7	1
1961	5,991	10.4	62.7	6.7	79.8	...	8.1	12.1	2
1962	6,094	9.8	63.8	5.4	79.1	...	8.6	12.3	2
1963	6,215	9.3	64.2	5.0	78.5	...	9.0	12.5	2
1964	6,351	8.8	65.1	4.2	78.1	...	9.5	12.4	2
1965	6,505	8.0	66.4	3.4	77.9	...	9.9	12.2	2
1966	6,678	7.1	67.5	3.1	77.8	...	10.2	12.1	2
1967	6,876	7.1	66.9	3.6	77.5	...	10.3	12.2	2
1968	7,070	6.7	66.1	4.2	77.0	...	10.6	12.4	2
1969	7,255	6.3	66.3	4.0	76.6	...	10.8	12.5	2
		Females							
	'000	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.
1960	5,942	0.8	26.0	1.0	27.9	61.0	6.6	4.5	7
1961	6,061	1.0	26.6	1.1	28.7	59.9	6.9	4.5	7
1962	6,186	1.0	27.1	1.0	29.0	59.1	7.4	4.5	7
1963	6,320	1.1	27.5	1.0	29.6	58.1	7.9	4.4	7
1964	6,466	1.1	28.5	0.9	30.5	56.9	8.3	4.3	6
1965	6,623	1.1	29.4	0.8	31.3	55.6	8.6	4.5	6
1966	6,796	1.0	30.9	0.9	32.8	54.0	8.8	4.5	6
1967	6,997	1.0	31.8	1.0	33.8	53.2	8.8	4.2	6
1968	7,194	1.0	32.3	1.2	34.4	52.2	8.9	4.4	6
1969	7,383	1.0	33.0	1.3	35.2	51.0	9.2	4.5	6

4.—Percentage Distribution of the Employed by Industrial Group, 1961-69

Year	Total Employed	Percentage Distribution							
		Agriculture	Other Primary Industries	Manufacturing	Construction	Transportation and Other Utilities	Trade	Finance, Insurance and Real Estate	Service[1]
	'000	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
.....	6,055	11.2	3.0	24.0	6.2	9.3	16.9	3.9	25.3
.....	6,225	10.6	2.9	24.1	6.3	9.4	16.9	4.0	25.8
.....	6,375	10.2	2.8	24.3	6.4	9.4	16.7	4.0	26.3
.....	6,609	9.5	3.0	25.0	6.2	8.9	16.7	4.0	26.7
.....	6,862	8.7	3.4	23.8	6.7	9.0	16.7	4.1	27.6
.....	7,152	7.6	3.1	24.4	7.0	8.7	16.5	4.2	28.5
.....	7,379	7.6	3.0	23.8	6.4	8.9	16.6	4.2	29.5
.....	7,537	7.2	2.9	23.3	6.2	8.9	16.7	4.3	30.4
.....	7,780	6.9	2.8	23.4	6.2	8.9	16.6	4.5	30.7

[1] Includes public administration and defence.

5.—Percentage Distribution of the Employed by Major Occupational Group, 1961-69

Year	All Occupations Annual Average	Managerial	Professional and Technical	Clerical	Sales[1]	Service and Recreation
	No.	p.c.	p.c.	p.c.	p.c.	p.c.
.....	6,055	9.2	9.9	13.3	7.4	10.9
.....	6,225	9.3	10.6	13.3	7.3	10.9
.....	6,375	9.2	10.6	13.4	7.2	11.1
.....	6,609	9.2	10.6	13.4	7.4	11.7
.....	6,862	9.3	11.4	13.4	7.0	11.6
.....	7,152	9.4	12.2	14.1	6.7	11.4
.....	7,379	9.4	12.4	14.1	6.8	11.8
.....	7,537	9.5	13.0	14.6	6.8	12.0
.....	7,780	9.6	13.3	14.8	6.8	12.0

Year	Transportation	Communication	Farmers and Farm Workers	Fishermen, Trappers, Loggers and Miners	Craftsmen, Production Process and Related Workers[2]	Labourers and Unskilled Workers
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
.....	5.8	0.9	11.3	2.1	24.2	5.0
.....	5.6	0.9	10.6	1.9	24.7	4.8
.....	5.6	0.9	10.3	1.9	24.9	4.8
.....	5.6	0.8	9.6	2.1	24.6	4.9
.....	5.4	0.9	8.7	2.2	25.2	4.9
.....	4.8	0.9	7.7	2.0	26.1	4.8
.....	4.7	0.9	7.6	1.9	26.1	4.3
.....	4.6	0.9	7.3	1.8	25.3	4.1
.....	4.5	0.8	6.9	1.6	25.5	4.1

[1] Includes commercial and financial occupations.

[2] Includes manufacturing and mechanical and construction occupations.

6.—Estimates of Employment and Unemployment, by Region, 1960-69

Year	Atlantic		Quebec		Ontario		Prairies		British Columb	
	Employment	Unemployment	Employment	Unemployment	Employment	Unemployment	Employment	Unemployment	Employment	Unem ploym
	'000	'000	'000	'000	'000	'000	'000	'000	'000	'00
1960..	492	59	1,639	164	2,249	128	1,069	47	516	
1961..	507	64	1,652	168	2,269	132	1,100	53	527	
1962..	516	62	1,713	139	2,317	105	1,129	46	551	
1963..	522	55	1,762	142	2,382	94	1,138	44	571	
1964..	542	46	1,827	124	2,473	83	1,162	37	605	
1965..	566	45	1,912	109	2,548	66	1,196	31	639	
1966..	586	40	2,016	100	2,651	69	1,222	26	678	
1967..	593	42	2,080	116	2,745	89	1,238	29	723	
1968..	596	47	2,082	145	2,830	104	1,280	39	750	
1969..	605	49	2,132	158	2,936	95	1,312	39	795	

Section 3.—Employment Statistics*

Subsection 1.—Statistics of Employment, Earnings and Hours

Monthly records of employment have been collected from larger business establis ments since 1921. At that time a survey was instituted to provide employment ind numbers which would serve as current economic indicators. In 1941 the survey w extended to provide information on payrolls and per capita wages and salaries and in 19 it was further extended to provide data on hours of work and hourly and weekly wag Also during the war period, separate records for men and women employees were establishe Beginning with the January 1966 issues of *Employment and Average Weekly Wages a Salaries* and *Man-Hours and Hourly Earnings*, the data compiled are on a revised bas A historical series (Catalogue No. 72-504) provides, on the revised basis, monthly a annual data from 1961-65. The revision has involved the publishing of employment i dexes on the time base 1961 = 100 in place of the time base 1949 = 100. All data are co piled on the 1960 standard industrial classification.

The survey now covers sectors of the following major industry divisions: forestr mining (including milling); manufacturing; construction; transportation, communicati and other utilities; trade; and finance, insurance and real estate. Also included are certa branches of the service industry, mainly hotels and restaurants, laundries and dry-cleani plants, and recreational and business services. The survey excludes agriculture, publ administration and community services such as health and education. The covera corresponds closely, therefore, to the business sector of the economy. Since the surv covers only firms employing 20 or more persons in any month of the year and exclud several industries, the employment records are published in the form of index numbers.

The monthly employment statistics relate to the number of employees drawing pa in the last pay period in the month. Data are requested for all classes of employees wi the exception of homeworkers and casual employees working less than one day in the pa period. Owners and firm members are also excluded. The respondents report the gro wages and salaries paid in the last pay period in the month, before deductions are made f income tax, unemployment insurance, etc. The reported payrolls represent gross rem neration for services rendered and paid absences in the period specified, including salarie commissions, piece-work and time-work payments, and such items as shift premiums an regularly paid production, and incentive and cost-of-living bonuses. The statistics o

* Prepared in the Employment Section, Labour Division, Dominion Bureau of Statistics.

urs relate to the straight and overtime hours worked by those wage-earners for whom cords of hours are maintained, and also to hours credited to wage-earners absent on paid ve during the reported period. If the reported period exceeds one week, the payroll d hours data are reduced to weekly equivalents.

Employment.—Table 7 shows that, over the 1965-69 period, the industrial composite dex of employment rose by 11.0 p.c. Each sector except forestry contributed to the ad- nce: service increased by 36.5 p.c., trade by 19.5 p.c., finance, insurance and real estate by .0 p.c., manufacturing by 6.8 p.c., transportation by 6.8 p.c., mining by 2.7 p.c. and con- ruction by less than 1 p.c. The decline in forestry amounted to 14.8 p.c. Compared with 68, the 1969 composite index moved up 3.4 p.c.

7.—Annual Average Index Numbers of Employment, by Industrial Division, 1965-69, and Monthly Indexes 1969

NOTE.—These indexes are calculated as at the last pay period of each month, on the base 1961=100.

Year and Month	Forestry	Mining (incl. milling)	Manufacturing	Construction	Transportation, Communication and Other Utilities	Trade	Finance, Insurance and Real Estate	Service[1]	Industrial Composite
erages—									
965	104.1	105.1	117.2	118.4	104.8	114.3	116.6	125.9	114.3
966	106.2	107.0	123.5	128.9	107.5	122.0	120.5	139.1	120.7
967	102.3	109.0	123.2	122.5	111.0	125.8	126.0	153.4	122.6
968	91.1	109.8	122.1	119.4	109.5	129.4	131.4	157.8	122.7
969	88.7	107.9	125.2	119.1	111.9	136.6	138.8	171.8	126.9
9—									
anuary	65.4	109.8	121.8	103.6	108.0	131.7	134.3	157.8	121.4
ebruary	63.1	110.4	122.5	104.8	108.1	130.9	134.9	160.2	121.9
larch	61.8	111.5	123.2	104.7	108.6	132.4	136.0	161.7	122.6
pril	58.1	108.8	123.6	111.3	108.9	133.2	136.1	163.4	123.4
lay	86.8	107.6	126.2	114.4	114.1	134.7	138.0	171.3	127.0
une	107.3	111.7	128.9	121.6	115.2	136.6	139.7	178.5	130.2
uly	111.8	105.5	125.3	131.1	115.6	133.4	141.0	181.8	129.1
ugust	111.2	103.5	127.9	136.3	117.2	134.9	140.4	184.3	131.1
eptember	108.8	101.7	127.0	134.8	114.9	138.6	140.0	179.2	130.3
ctober	103.3	101.4	126.7	133.3	112.7	141.0	141.1	179.3	130.0
November	96.6	111.4	126.4	126.0	112.5	145.2	141.8	175.3	130.1
December	85.5	111.2	123.3	106.8	109.9	145.8	141.9	168.8	126.5

[1] Consists mainly of hotels, restaurants, laundries, dry-cleaning establishments and recreational and business vices.

.—Annual Average Index Numbers of Employment, by Industrial Division and Group, 1965-69

NOTE.—These indexes refer to the last week of each month and are on the base 1961=100.

Industry	1965	1966	1967	1968	1969
restry	**104.1**	**106.2**	**102.3**	**91.1**	**88.7**
ning (incl. milling)	**105.1**	**107.0**	**109.0**	**109.8**	**107.9**
Metals	103.2	103.4	105.0	103.8	97.4
Gold	81.0	72.1	62.7	56.4	51.1
Copper-gold-silver	109.6	120.6	125.8	120.5	121.3
Iron	139.8	141.0	135.9	134.1	122.6
Mineral fuels	100.6	100.7	103.6	103.4	102.6
Coal	91.3	87.5	83.5	78.2	69.6
Petroleum and gas wells	109.7	113.8	123.8	129.0	136.4

8.—Annual Average Index Numbers of Employment, by Industrial Division and Group, 1965-69—continued

Industry	1965	1966	1967	1968	1969
Mining—concluded					
Non-metals (except fuels)	106.7	109.9	113.9	117.3	126.3
Asbestos	95.9	100.4	103.5	109.3	110.9
Manufacturing	**117.2**	**123.5**	**123.2**	**122.1**	**125.2**
Durable goods	126.0	134.7	133.9	131.7	136.7
Non-durable goods	110.1	114.4	114.5	114.4	115.9
Foods and beverages	106.6	109.9	110.4	110.2	109.1
Slaughtering and meat processing	104.2	101.4	104.4	105.1	102.1
Dairy products	105.1	106.3	106.7	105.6	101.6
Fish products	117.3	127.5	121.7	131.3	129.7
Fruit and vegetable processing	118.8	124.8	120.9	120.8	118.4
Grain mill products	94.5	100.0	103.5	103.4	102.7
Biscuits	103.8	106.1	108.1	104.9	106.0
Bakeries	102.2	103.8	99.7	96.0	95.9
Confectionery	110.9	116.1	115.9	110.3	107.2
Soft drinks	110.0	117.6	124.6	125.4	122.5
Distilleries	98.6	108.2	115.7	113.3	117.5
Breweries	98.9	99.1	98.9	97.3	97.8
Tobacco processing and products	99.2	99.5	105.1	101.2	97.8
Rubber products	117.4	123.6	122.0	120.0	123.7
Leather products	101.7	103.5	98.7	100.3	99.2
Shoes (except rubber)	96.0	98.3	94.4	94.9	94.3
Luggage, handbags and small leather goods	126.3	129.7	123.8	127.6	123.6
Textile products	114.2	120.0	119.9	117.8	119.8
Cotton yarn and cloth	106.1	96.3	100.2	89.7	86.9
Woollen yarn and cloth	111.7	110.4	97.3	90.6	89.9
Synthetic textiles	136.3	136.3	136.0	131.0	136.3
Knitting mills	111.5	116.7	110.5	113.7	117.3
Hosiery	101.1	101.6	98.1	108.1	113.1
Other knitting mills	117.9	125.5	117.7	117.3	120.2
Clothing	112.5	114.5	110.9	109.2	109.2
Men's clothing	118.5	120.2	116.5	113.6	114.5
Women's clothing	113.3	116.6	114.9	113.2	115.5
Wood products	113.4	113.1	108.3	108.4	113.0
Saw, shingle and planing mills	111.6	108.9	103.9	105.4	111.7
Furniture and fixtures	122.8	132.5	128.6	126.8	134.0
Household furniture	126.5	137.0	131.8	130.9	138.7
Paper and allied industries	111.1	117.5	118.4	117.6	121.7
Pulp and paper mills	108.6	114.9	115.0	112.7	116.3
Printing, publishing and allied industries	105.4	110.9	113.6	114.4	115.5
Commercial printing	105.3	110.7	114.3	116.9	117.8
Printing and publishing	105.2	100.4	110.6	109.6	110.8
Primary metal industries	118.7	125.0	124.4	125.6	123.2
Iron and steel mills	129.6	133.8	129.5	130.7	126.1
Iron foundries	131.9	145.5	139.9	144.5	153.2
Smelting and refining	105.5	110.5	114.8	113.2	107.3
Metal fabricating industries	125.7	136.2	133.6	130.1	135.7
Fabricated structural metals	119.2	134.4	120.5	108.6	117.1
Ornamental and architectural metals	125.2	130.7	123.5	119.0	125.3
Metal stamping, pressing and coating	128.7	136.3	138.1	138.3	144.6
Wire and wire products	132.3	136.0	134.7	135.4	138.6
Hardware, tools and cutlery	138.3	149.7	148.4	150.0	160.8
Heating equipment	107.1	110.9	109.4	104.5	106.6
Miscellaneous metal fabricating	127.1	137.4	134.5	130.5	130.1
Machinery (except electrical)	137.1	147.7	149.7	141.0	151.4
Agricultural implements	133.8	142.7	141.0	109.7	119.2
Miscellaneous machinery and equipment	142.1	152.0	150.8	143.4	152.5
Office and store machinery	124.6	141.4	162.2	172.8	191.2
Transportation equipment	137.5	149.3	151.8	147.6	155.6
Aircraft and parts	93.4	114.1	129.1	123.0	117.3
Motor vehicles	163.7	171.2	168.0	169.3	183.9
Assembling	170.8	174.8	166.2	170.0	181.6
Parts and accessories	158.0	168.0	168.7	166.8	180.5
Shipbuilding and repair	128.5	135.6	128.8	108.4	107.6
Electrical products	128.1	142.0	144.2	143.6	150.4
Major appliances (incl. non-electrical)	119.8	125.0	119.7	120.0	125.5
Household radios and televisions	106.9	120.6	127.9	119.9	130.4
Communications equipment	139.5	150.5	167.7	177.6	180.0

—Annual Average Index Numbers of Employment, by Industrial Division and Group, 1965-69—concluded

Industry	1965	1966	1967	1968	1969
ufacturing—concluded					
on-metallic mineral products	121.3	125.5	119.2	116.8	119.3
Concrete products	143.1	142.9	122.2	115.8	124.4
Clay products	110.0	113.0	108.5	108.1	111.3
Glass and glass products	121.4	124.5	125.2	128.9	129.2
etroleum and coal products	97.2	99.7	102.7	104.0	104.0
Petroleum refineries	89.6	88.7	94.0	94.4	92.2
hemicals and chemical products	111.1	117.1	118.8	118.7	120.4
Pharmaceuticals and medicines	112.9	121.9	131.2	133.4	137.9
Paints and varnishes	99.9	105.3	108.0	106.4	109.6
Soap and cleaning compounds	104.1	103.1	101.8	102.5	102.3
Industrial chemicals	111.5	116.3	118.3	115.7	117.9
iscellaneous manufacturing industries	121.5	131.2	133.0	137.8	149.4
struction	**118.4**	**128.9**	**122.5**	**119.4**	**119.1**
uilding	120.6	131.4	127.8	127.2	130.3
General contractors	114.7	123.5	115.2	111.2	110.7
Special trade contractors	127.0	140.2	141.5	144.2	151.1
ngineering	112.5	124.5	113.3	106.0	99.8
Highways, bridges and streets	105.1	106.6	97.0	90.2	84.0
Other engineering	120.3	147.0	134.2	127.0	120.1
nsportation, Communication and Other Utilities	**104.8**	**107.5**	**111.0**	**109.5**	**111.9**
ransportation	102.4	103.9	107.8	105.8	107.3
Air transport and services	104.2	119.1	136.0	143.7	145.2
Water transport and services	105.2	106.6	102.9	99.8	101.2
Railway transport	96.1	94.9	96.6	88.4	86.3
Truck transport	118.2	119.4	129.4	133.6	138.7
Bus transport, interurban and rural	102.5	110.8	115.6	113.4	123.2
Urban transit	101.8	106.3	112.9	115.6	113.8
Highway and bridge maintenance	103.6	105.7	108.1	111.3	116.6
orage	107.0	113.5	114.8	111.4	110.1
Grain elevators	104.9	111.4	110.7	107.4	102.5
Other storage and warehousing	114.5	119.2	126.0	122.6	131.4
ommunication	108.9	116.5	118.8	116.3	121.3
Radio and television broadcasting	111.6	117.2	124.0	128.3	132.7
Telephone	110.9	122.0	122.2	118.2	119.0
Telegraph and cable	96.4	95.9	93.0	86.5	81.5
Post office	107.9	112.3	118.1	116.6	132.8
ectric power, gas and water	108.6	109.3	113.1	116.3	119.0
Electric power	107.4	110.3	115.0	118.3	121.6
Gas distribution	112.6	102.0	102.5	105.2	107.6
le	**114.3**	**122.0**	**125.8**	**129.4**	**136.6**
holesale	110.8	117.5	121.1	122.5	129.0
etail	116.2	124.6	128.4	133.2	140.7
Food stores	117.5	125.9	133.0	140.3	148.4
Department stores	115.5	125.8	128.6	131.6	136.9
Variety stores	118.7	125.1	119.5	124.7	132.5
Automotive product stores	124.7	131.5	134.8	141.5	148.3
nce, Insurance and Real Estate	**116.6**	**120.5**	**126.0**	**131.4**	**138.8**
nancial institutions	120.0	124.4	128.7	134.3	143.5
surance and real estate	111.5	114.9	122.3	127.4	132.4
Insurance carriers	109.6	112.0	119.3	122.4	124.7
ice	**125.9**	**139.1**	**153.4**	**157.8**	**171.8**
ecreational services	116.9	127.5	135.4	144.3	158.4
siness services	137.3	156.7	167.4	173.1	189.5
rsonal services	120.0	130.4	141.4	145.7	157.2
iscellaneous services	136.9	153.9	188.3	187.6	206.7
Industrial Composite	**114.3**	**120.7**	**122.6**	**122.7**	**126.9**

9.—Annual Average Index Numbers of Employment, by Province, 1965-69, and Monthly Indexes 1969

NOTE.—These indexes refer to the last week of each month and are on the base 1961=100.

Year and Month	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Ca
Averages—											
1965	118.0	112.2	108.6	109.7	112.8	116.5	106.0	110.4	112.6	118.2	11
1966	126.2	124.4	113.0	115.2	118.1	123.3	111.2	116.5	120.5	126.2	12
1967	121.7	124.9	113.3	116.5	119.4	125.1	115.0	119.5	126.2	128.7	12
1968	119.3	131.9	114.3	116.5	117.7	126.1	115.6	119.5	128.7	128.8	12
1969	120.7	130.6	117.8	119.1	119.9	131.0	118.0	118.1	136.7	137.5	12
1969—											
January	110.3	111.6	113.4	111.5	115.3	127.3	112.2	112.2	126.4	125.6	12
February	110.6	108.7	113.3	110.8	114.9	127.5	112.4	114.2	129.3	128.3	12
March	110.7	106.9	112.9	110.7	115.5	128.1	112.9	113.7	130.9	131.6	12
April	111.0	113.4	114.2	110.2	116.1	129.1	112.7	115.5	130.5	132.6	12
May	116.6	129.0	116.8	118.4	119.8	131.5	118.0	119.9	135.5	137.6	12
June	122.3	142.7	122.7	124.9	122.8	134.4	120.6	122.0	140.5	140.1	13
July	128.1	149.3	123.3	127.0	123.0	130.4	121.8	122.6	143.6	140.8	12
August	133.1	154.6	123.1	130.1	125.1	132.0	123.0	123.7	143.2	146.4	13
September	132.7	146.5	119.7	125.0	124.3	132.1	122.6	122.4	142.1	143.5	13
October	129.0	145.2	119.8	123.5	123.8	132.8	122.3	119.7	140.7	142.2	13
November	122.4	132.8	118.5	120.5	122.2	134.9	120.6	116.9	140.2	142.4	13
December	113.5	126.1	115.5	115.4	117.9	131.8	117.0	114.7	137.2	139.6	12

10.—Annual Average Index Numbers of Employment, by Metropolitan Area, 1965-69, and Monthly Indexes 1969

NOTE.—These indexes refer to the last week of each month and are on the base 1961=100.

Year and Month	Montreal	Quebec	Toronto	Ottawa-Hull	Hamilton	Windsor	Winnipeg	Van couv
Averages—								
1965	114.0	113.0	115.8	111.5	119.8	132.7	107.6	117.
1966	120.8	115.8	123.6	117.4	123.7	148.5	114.3	124.
1967	122.6	116.3	126.0	123.5	120.8	148.2	117.3	127.
1968	121.0	114.6	128.2	128.6	119.8	149.6	116.9	129.
1969	122.7	118.1	134.3	137.7	121.2	152.7	121.2	140.
1969—								
January	119.3	115.5	129.8	131.9	121.0	153.2	115.6	131.
February	119.8	114.4	130.2	131.4	121.0	152.5	115.8	133.
March	120.8	116.3	131.1	131.7	122.1	149.4	116.5	136.
April	121.5	116.0	132.3	134.0	123.5	151.4	116.1	136.
May	123.5	113.2	133.0	136.1	124.5	154.8	120.9	139.
June	125.4	115.0	136.3	140.0	126.1	150.2	123.1	139.
July	123.3	121.6	133.3	139.4	124.1	129.1	123.0	140.
August	125.7	121.9	136.1	142.5	108.9	158.6	124.3	147.
September	125.6	121.1	137.3	141.0	110.3	162.6	125.1	143.
October	125.3	122.0	138.3	142.4	123.7	160.5	126.3	142.
November	124.5	121.8	138.5	142.3	125.7	157.2	125.8	146.
December	120.1	118.2	134.9	139.4	123.2	153.2	121.5	143.

Weekly Wages and Salaries.—Average weekly wages and salaries have increas substantially in the years for which current payroll statistics have been collected, risi from $23.44 in 1939 to $109.88 in 1968 and $117.79 in 1969. The upward movement gain momentum after the end of the War and average annual increases from 1946 to 1952 we more than double those between 1939 and 1946. After 1952 the rate of increase, in ter of year-to-year percentage changes, fell slightly, particularly between 1959 and 1962 wh average earnings rose about 3 p.c. per annum. In the following years the rate increas moderately—earnings in 1968 were 7.0 p.c. higher than in 1967 and 7.2 p.c. higher in 19 than in 1968.

11.—Annual Index Numbers of Employment and Average Weekly Wages and Salaries, by Industry, Province and Urban Area, 1967-69

Industry, Province and Urban Area	Employment (1961=100)			Average Weekly Wages and Salaries		
	1967	1968	1969	1967	1968	1969
				$	$	$
Industry						
estry	102.3	91.1	88.7	113.64	122.04	133.60
ing (incl. milling)	109.0	109.8	107.9	129.13	139.16	148.93
nufacturing	123.2	122.1	125.2	106.53	114.42	122.93
urable goods[1]	133.9	131.7	136.7	114.07	123.30	132.13
on-durable goods[1]	114.5	114.4	115.9	99.95	106.16	114.14
struction	122.5	119.4	119.1	130.83	137.59	150.68
nsportation, communication and other utilities	111.0	109.5	111.9	113.15	122.70	131.03
de	125.8	129.4	136.6	81.24	86.91	93.80
nce, insurance and real estate	126.0	131.4	138.8	99.02	106.21	113.83
rice	153.4	157.8	171.8	74.98	78.99	84.23
Industrial Composite	**122.6**	**122.7**	**126.9**	**102.76**	**109.88**	**117.63**
Province						
wfoundland	121.7	119.3	120.7	90.92	99.15	106.00
ce Edward Island	124.9	131.9	130.6	70.58	72.41	80.87
a Scotia	113.3	114.3	117.8	82.64	88.19	94.51
Brunswick	116.5	116.5	119.1	85.25	89.55	96.80
bec	119.4	117.7	119.9	101.16	107.92	114.24
ario	125.1	126.1	131.0	105.86	113.52	121.55
itoba	115.0	115.6	118.0	91.95	100.46	107.67
katchewan	119.5	119.5	118.1	95.77	102.11	107.90
erta	126.2	128.7	136.7	100.86	108.02	117.95
ish Columbia	128.7	128.8	137.5	114.50	120.76	129.35
Urban Area						
ner Brook, Nfld	109.4	103.9	100.9	103.68	109.99	116.94
John's, Nfld	138.6	137.7	136.2	80.51	87.39	92.44
fax, N.S	114.1	116.7	121.9	84.67	91.31	98.12
ney, N.S	98.8	99.7	93.3	92.97	95.11	101.44
cton, N.B	116.2	118.8	129.0	80.58	86.38	93.34
t John, N.B	110.3	111.2	114.6	84.80	89.82	97.97
coutimi, Que	109.9	106.5	112.0	121.05	125.20	133.62
mmondville, Que	119.2	115.1	120.1	82.53	87.74	93.55
bby, Que	111.2	108.3	109.3	83.28	87.13	93.69
treal, Que	122.6	121.0	122.7	102.40	109.63	116.71
wa, Ont.-Hull, Que	123.5	128.6	137.7	95.86	102.74	110.36
bec, Que	116.3	114.6	118.1	87.13	93.33	100.49
yn-Noranda, Que	108.7	101.5	104.3	101.95	104.55	113.95
Hyacinthe, Que	124.1	122.6	122.7	75.98	81.40	88.72
ean, Que	128.2	129.9	127.4	85.76	91.49	98.78
érôme, Que	100.9	103.6	114.7	83.91	89.28	94.91
vinigan, Que	100.6	98.7	94.4	104.60	110.49	118.91
brooke, Que	118.7	115.7	117.2	85.91	92.91	99.16
, Que	154.0	139.3	155.7	111.49	120.03	127.99
ford Mines, Que	104.5	113.4	119.9	106.49	114.35	119.55
s-Rivières, Que	115.3	111.2	114.9	94.73	100.30	108.27
eyfield, Que	134.1	129.0	131.0	103.38	112.94	121.13
eville, Ont	116.7	118.7	124.8	89.37	95.48	102.97
npton, Ont	246.1	261.5	280.1	104.19	112.27	120.09
tford, Ont	133.9	125.6	137.7	99.15	103.44	110.57
kville, Ont	140.9	130.4	128.1	101.56	107.52	114.81
tham, Ont	129.5	133.9	139.4	102.99	112.89	119.89
wall, Ont	130.0	132.7	138.5	98.55	105.96	111.70
ph, Ont	136.1	136.7	141.9	94.90	103.60	110.65
ilton, Ont	120.8	119.8	121.2	109.31	116.62	123.06
ston, Ont	121.7	123.0	128.3	100.76	108.30	115.28
hener, Ont	141.9	145.3	154.9	93.16	101.53	108.41

[1] Durable goods manufacturing includes wood products, furniture and fixtures, primary metal industries, metal cating industries, machinery (except electrical), transportation equipment, electrical products and non-metallic ral products; non-durable goods manufacturing includes all other manufacturing industries.

11.—Annual Index Numbers of Employment and Average Weekly Wages and Salaries, by Industry, Province and Urban Area, 1967-69—concluded

Urban Area	Employment (1961=100)			Average Weekly Wages and Salaries		
	1967	1968	1969	1967	1968	1969
				$	$	$
Urban Area—concluded						
London, Ont.	124.3	121.3	125.2	97.54	105.05	113.2
Niagara Falls, Ont.	112.3	106.9	112.5	99.51	105.01	112.5
North Bay, Ont.	104.4	113.0	116.0	104.50	108.40	115.5
Oshawa, Ont.	135.8	130.1	140.8	118.89	130.36	136.7
Peterborough, Ont.	134.9	132.8	141.5	107.23	114.44	122.7
St. Catharines, Ont.	140.8	133.6	143.2	113.51	121.84	132.5
St. Thomas, Ont.	138.1	173.1	207.5	93.64	112.40	128.5
Sarnia, Ont.	130.2	139.6	143.0	137.46	144.31	153.6
Sault Ste Marie, Ont.	119.0	119.4	111.3	117.86	124.29	130.7
Stratford, Ont.	139.7	141.3	150.5	89.50	96.59	104.2
Sudbury, Ont.	109.8	115.7	103.2	122.96	133.73	140.1
Thunder Bay, Ont.	126.9	119.6	124.2	102.36	105.68	117.0
Timmins, Ont.	83.9	75.5	72.4	96.08	100.21	106.3
Toronto, Ont.	126.0	128.2	134.3	106.64	114.08	123.0
Welland, Ont.	112.2	108.4	108.1	119.99	127.58	138.4
Windsor, Ont.	148.2	149.6	152.7	117.01	128.92	137.2
Woodstock, Ont.	144.2	149.4	158.4	96.16	103.21	110.6
Winnipeg, Man.	117.3	116.9	121.2	86.81	93.50	100.8
Regina, Sask.	119.4	121.7	123.0	92.31	96.75	103.5
Saskatoon, Sask.	140.9	144.5	140.9	90.30	96.42	101.3
Calgary, Alta.	134.9	136.8	147.3	100.41	106.71	117.1
Edmonton, Alta.	130.8	136.0	145.1	94.95	102.63	111.9
Vancouver, B.C.	127.7	129.6	140.0	109.69	116.29	125.2
Victoria, B.C.	125.9	122.1	133.6	97.49	103.56	112.0

12.—Annual Average Weekly Wages and Salaries, by Industrial Division, 1965-69, and Monthly Averages 1969

Year and Month	Forestry	Mining (incl. milling)	Manufacturing	Construction	Transportation, Communication and Other Utilities	Trade	Finance, Insurance and Real Estate	Service[1]	Industrial Composit
	$	$	$	$	$	$	$	$	$
Averages—									
1965	96.81	111.53	94.78	107.92	98.77	73.49	88.29	65.76	91.0
1966	104.78	119.55	100.13	120.42	103.41	76.86	93.00	70.18	96.3
1967	113.64	129.13	106.53	130.83	113.15	81.24	99.02	74.98	102.7
1968	122.04	139.16	114.42	137.59	122.70	86.91	106.21	78.99	109.8
1969	133.60	148.96	122.93	150.68	131.03	93.80	113.83	84.23	117.6
1969—									
January	118.24	146.72	119.47	140.40	128.67	90.55	110.87	82.01	114.0
February	133.60	148.07	120.80	148.43	127.73	91.35	111.00	82.47	115.3
March	142.81	148.54	121.72	145.86	129.94	91.80	111.70	83.04	116.1
April	136.80	147.02	121.84	147.49	129.76	92.68	113.58	83.16	116.4
May	129.61	147.10	122.58	149.54	130.78	93.59	114.62	83.59	117.2
June	127.07	145.62	122.63	147.80	131.18	95.00	115.98	84.22	117.6
July	131.06	146.06	122.18	153.31	134.15	95.58	115.02	84.38	118.2
August	132.69	147.97	122.55	156.85	135.65	94.63	114.24	84.89	119.0
September	137.54	149.80	125.62	159.67	135.54	95.15	113.27	84.55	120.4
October	136.68	153.14	125.93	158.78	136.61	95.01	114.39	84.95	120.7
November	140.79	153.91	127.18	160.00	137.00	94.79	115.07	86.34	121.4
December	133.27	153.28	122.47	130.09	133.50	94.97	115.95	86.45	116.8

[1] Mainly hotels, restaurants, laundries, dry-cleaning establishments and recreational and business services.

Hours and Earnings of Hourly Rated Wage-Earners.—The monthly survey of nployment and payrolls covers statistics of hours of work and paid absence of those age-earners for whom records of hours are maintained, together with the corresponding tals of gross wages paid. These wage-earners are mainly hourly rated production work-s; information on hours is frequently not kept by employers for ancillary workers nor, in any industries and establishments, for any wage-earners. Salaried employees are ex-uded by definition from the series. As a result of these exclusions, data are available r fewer industries and workers than are covered in the employment and average weekly age and salary statistics.

During the period 1965-69, there was little change in average weekly hours but average urly and weekly wages rose substantially. For the most part, upward wage-rate revisions all industries were responsible for the increases. Technological changes, which in many ses involve the employment of more highly skilled workers at the expense of those in the wer-paid occupations, also contributed to the advance of average hourly earnings. From 65 to 1969, average weekly wages rose 28.5 p.c. in manufacturing, 32.1 p.c. in mining d 40.5 p.c. in construction. Average hourly earnings increased 31.6 p.c. in manufacturing, .0 p.c. in mining and 46.6 p.c. in construction. In construction, 1969 average hourly rnings of $3.71 and average weekly wages of $147.68 represented increases of 11.4 p.c. d 9.5 p.c., respectively, over the 1968 levels.

13.—Annual Average Weekly Hours and Earnings of Hourly Rated Wage-Earners in Specified Industries, 1965-69, and Monthly Averages 1969

Year and Month	All Manufactures			Mining (incl. milling)			Construction		
	Average Weekly Hours	Average Hourly Earnings	Average Weekly Wages	Average Weekly Hours	Average Hourly Earnings	Average Weekly Wages	Average Weekly Hours	Average Hourly Earnings	Average Weekly Wages
	No.	$	$	No.	$	$	No.	$	$
erages—									
965.....	41.1	2.12	86.94	42.4	2.43	102.92	41.5	2.53	105.11
966.....	40.8	2.25	91.65	42.2	2.60	109.77	42.2	2.80	118.06
967.....	40.3	2.40	96.84	41.9	2.84	119.09	41.3	3.12	128.76
968.....	40.3	2.58	104.00	41.8	3.07	128.28	40.5	3.33	134.84
969.....	40.0	2.79	111.72	41.4	3.28	135.94	39.8	3.71	147.68
9—									
anuary.....	40.1	2.71	108.42	41.9	3.22	135.10	38.5	3.53	135.94
ebruary.....	40.3	2.72	109.65	42.2	3.23	136.37	40.4	3.61	146.09
Iarch.....	40.5	2.74	110.97	42.4	3.24	137.44	39.4	3.62	142.81
pril.....	40.3	2.75	110.87	41.4	3.23	134.04	39.4	3.66	144.38
Iay.....	40.4	2.77	111.97	41.5	3.24	134.51	40.7	3.61	146.61
une.....	40.2	2.78	111.83	40.8	3.25	132.87	40.0	3.62	144.78
uly.....	39.9	2.77	110.57	40.7	3.23	131.55	41.6	3.64	151.35
ugust.....	40.1	2.78	111.37	41.2	3.24	133.49	42.0	3.70	155.49
eptember....	40.7	2.82	114.89	41.6	3.25	135.24	42.0	3.78	158.81
ctober.....	40.4	2.84	114.87	41.9	3.30	138.52	40.9	3.86	157.94
Iovember....	40.4	2.88	116.18	41.2	3.45	142.09	40.4	3.93	158.72
ecember....	37.2	2.92	108.68	39.9	3.51	140.04	30.3	3.96	119.90

14.—Average Weekly Hours and Earnings of Hourly Rated Wage-Earners in Specified Industries and Selected Urban Areas, 1967-69

Industry, Province and Urban Area	Average Weekly Hours			Average Hourly Earnings			Average Weekly Wages		
	1967	1968	1969	1967	1968	1969	1967	1968	1969
	No.	No.	No.	$	$	$	$	$	$
Industry									
Mining (incl. milling)	**41.9**	**41.8**	**41.4**	**2.84**	**3.07**	**3.28**	**119.09**	**128.28**	**135.94**
Metal mining	41.3	41.2	40.7	2.98	3.20	3.38	122.79	131.55	137.68
Coal mining	42.6	41.8	41.9	2.13	2.34	2.59	90.68	97.66	108.58
Manufacturing	**40.3**	**40.3**	**40.0**	**2.40**	**2.58**	**2.79**	**96.84**	**104.00**	**111.72**
Durable goods[1]	40.8	40.9	40.6	2.58	2.79	3.00	105.32	113.83	121.76
Non-durable[1]	39.8	39.7	39.5	2.22	2.37	2.57	88.37	94.34	101.64
Construction	**41.3**	**40.5**	**39.8**	**3.12**	**3.33**	**3.71**	**128.76**	**134.84**	**147.68**
Building	39.3	38.6	38.0	3.17	3.42	3.82	124.53	131.95	145.30
Engineering	45.3	44.6	44.0	3.03	3.16	3.48	137.15	140.92	153.15
Other—									
Urban transit	42.8	41.5	41.7	2.91	3.18	3.43	124.55	132.03	143.13
Highway and bridge maintenance	39.9	39.3	36.2	2.22	2.41	2.49	88.71	94.97	89.89
Hotels, restaurants and taverns	34.2	33.4	37.4	1.39	1.49	1.62	47.57	49.87	60.80
Laundries, cleaners and pressers	38.8	38.1	32.3	1.40	1.51	1.62	54.51	57.33	52.32
Province Manufacturing									
Newfoundland	40.8	41.2	41.6	2.06	2.11	2.25	84.01	86.86	93.69
Nova Scotia	39.8	39.7	39.8	1.94	2.06	2.20	77.37	81.80	87.85
New Brunswick	41.1	40.9	40.3	2.00	2.10	2.29	82.28	85.85	92.43
Quebec	41.1	41.0	40.8	2.16	2.33	2.50	88.81	95.33	102.07
Ontario	40.3	40.4	40.1	2.52	2.71	2.93	101.58	109.38	117.46
Manitoba	39.5	39.5	39.4	2.14	2.31	2.47	84.04[r]	91.20	97.33
Saskatchewan	39.6	39.4	39.7	2.47	2.74	2.94	97.82	108.01	116.75
Alberta	39.5	39.3	39.4	2.45	2.64	2.90	96.83	103.93	114.19
British Columbia	37.7	37.7	37.4	3.01	3.23	3.48	113.20	121.64	130.27
Selected Urban Area Manufacturing									
Montreal	40.5	40.4	40.2	2.21	2.39	2.56	89.28	96.52	103.00
Toronto	40.4	40.5	40.3	2.43	2.60	2.84	98.47	105.13	114.40
Hamilton	39.9	40.1	39.7	2.79	2.96	3.17	111.41	118.79	125.67
Windsor	41.8	41.7	39.8	2.95	3.28	3.53	123.63	136.77	140.33
Winnipeg	39.3	39.2	39.1	2.10	2.27	2.45	82.59	88.77	95.59
Vancouver	37.6	37.4	37.2	2.90	3.13	3.40	108.86	117.30	126.44

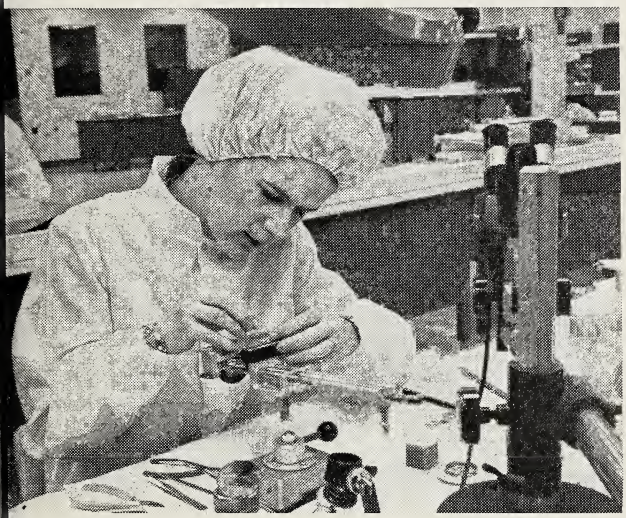
[1] Durable goods manufacturing includes wood products, furniture and fixtures, primary metal industries, metal fabricating industries, machinery (except electrical), transportation equipment, electrical products and non-metallic mineral products; non-durable goods manufacturing includes all other manufacturing industries.

Subsection 2.—Earnings and Hours of Work in Manufacturing*

Since 1946 an annual survey of earnings and hours of work in manufacturing has been conducted using (since 1948) the last week of October as the survey week. Information is collected during this normal or representative working week of the year, following generally the same concepts, definitions and coverage as in the larger establishment monthly employment survey. If strikes or other unusual working conditions distort the norm for

* More detailed information is given in DBS annual report *Earnings and Hours of Work in Manufacturing* (Catalogue No. 72-204).

The number of women employed in all industries in Canada rose from 1,911,000 in 1964 to 2,508,000 in 1969. In the later year, more than one out of three women in the country were in the labour force and over half of them were under 35 years of age.



The largest number of women workers, over 1,300,000, were in clerical, service and recreation occupations and 436,000, including teachers and skilled technicians, were in the professional and technical category.

s week, a more suitable week is substituted. Over the whole period, earnings and urs of work in manufacturing have been reported by sex and category and, since 1951, ures have been available for clerical and related workers as distinct from other salaried ployees. In addition, the distribution of employees by weekly earnings has been col- ed periodically since 1950 and the distribution of wage-earners by hours worked or d for was collected each year from 1946 to 1949 and periodically thereafter.

Tables **15** and **16** give figures for 1963-68. It should be noted that in 1963 there was reak in continuity with previous years. The new establishment concept introduced 961 drew into the manufacturing universe some activity reports, such as sales branches, ch formerly reported to other industries; these are now coded to manufacturing when y form part of an establishment, the principal activity of which is manufacturing. The vey was not carried out in 1961 and 1962 and revised figures are available only from 1963. 1960 standard industrial classification is used in Tables **17** and **18.**

15.—Average Earnings of Male and Female Employees in Manufacturing, Survey Week 1963-68, and Percentage Increases over Previous Year

NOTE.—Survey week is the last week of October. This survey was not conducted in 1961 and 1962 (see p. 8

Year	Male		Female		Both Sexes	
	Average Earnings	Increase over Previous Year	Average Earnings	Increase over Previous Year	Average Earnings	Increas over Previou Year
	AVERAGE HOURLY WAGES					
	$	p.c.	$	p.c.	$	p.c.
1963	2.13	..	1.27	..	1.94	..
1964	2.21	3.7	1.33	4.7	2.02	4.1
1965	2.33	5.4	1.41	6.0	2.14	5.9
1966	2.50	7.3	1.51	7.1	2.29	7.0
1967	2.66	6.4	1.63	7.9	2.44	10.9
1968	2.88	8.3	1.74	6.7	2.64	8.2
	AVERAGE WEEKLY WAGES					
	$	p.c.	$	p.c.	$	p.c.
1963	90.04	..	49.31	..	80.79	..
1964	94.08	4.5	51.45	4.3	84.37	4.4
1965	99.50	5.8	54.88	6.7	89.39	5.9
1966	105.45	6.0	58.01	5.7	94.52	5.7
1967	111.25	5.5	61.59	6.2	99.91	5.7
1968	120.34	8.2	66.26	7.6	108.19	8.3
	AVERAGE WEEKLY SALARIES					
	$	p.c.	$	p.c.	$	p.c.
1963	128.67	..	64.24	..	111.40	..
1964	133.64	3.9	66.51	3.5	115.59	3.8
1965	139.01	4.0	69.35	4.3	120.30	4.1
1966	147.95	6.4	75.26	8.5	128.79	7.1
1967	155.76	5.3	80.21	6.6	135.94	5.6
1968	163.56	5.0	83.56	4.2	142.06	4.5

16.—Proportions of Male and Female Employees classified as Salaried Staff, Survey Week 1963-68

NOTE.—Survey week is the last week of October. This survey was not conducted in 1961 and 1962 (see p. 867

Year	Durable Goods			Non-durable Goods			All Manufacturing		
	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1963	21.7	43.9	24.5	25.0	22.2	24.0	23.3	27.4	24.3
1964	21.4	43.6	24.2	25.2	22.1	24.1	23.2	27.3	24.2
1965	21.1	42.4	23.8	25.6	22.3	24.5	23.1	27.4	24.1
1966	23.1	42.9	25.8	28.0	23.4	26.5	25.3	28.8	26.1
1967	24.4	44.5	27.1	29.0	24.8	27.6	26.5	30.2	27.4
1968	25.7	46.2	28.6	34.0	30.1	32.7	29.5	34.6	30.7

17.—Average Hours and Earnings of Wage-Earners in Manufacturing, by Industry and Province, Survey Week 1968

NOTE.—Survey week is the last week of October; based on the revised standard industrial classification.

Industry, Province and Urban Area	Average Weekly Hours			Average Hourly Earnings			Average Weekly Earnings		
	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes
	No.	No.	No.	$	$	$	$	$	$
Industry									
Foods and beverages	40.5	35.6	39.4	2.49	1.70	2.32	100.94	60.52	91.52
Tobacco processing and products	37.6	36.3	37.0	3.24	2.88	3.06	121.77	104.67	113.18
Rubber products	43.5	39.3	42.6	2.95	1.85	2.73	128.40	72.70	116.08
Leather products	40.3	37.8	39.1	2.06	1.49	1.79	82.99	56.34	70.00
Textile products	43.4	39.2	41.8	2.24	1.79	2.08	97.03	70.01	86.79
Knitting mills	44.0	40.3	41.5	1.89	1.44	1.59	82.92	58.13	66.13
Clothing	38.0	37.2	37.4	2.55	1.58	1.77	97.03	58.78	65.95
Wood products	40.5	38.8	40.4	2.55	1.88	2.52	103.10	72.92	102.09
Furniture and fixtures	43.3	41.0	43.0	2.19	1.68	2.12	94.98	68.82	90.94
Paper and allied industries	41.8	38.3	41.4	3.24	1.82	3.09	135.16	69.70	127.95
Printing, publishing and allied industries	39.2	37.5	38.8	3.48	1.94	3.13	136.17	72.85	121.35
Primary metal industries	41.5	35.8	41.5	3.24	2.21	3.23	134.75	78.94	134.17
Metal fabricating industries	41.6	40.0	41.4	2.94	1.81	2.81	122.48	72.56	116.49
Machinery (except electrical)	41.5	38.7	41.4	2.99	2.03	2.94	123.98	78.80	121.77
Transportation equipment	43.3	39.4	43.1	3.29	2.09	3.22	142.24	82.34	138.64
Electrical products	41.5	39.1	40.7	2.77	2.02	2.52	115.02	79.14	102.69
Non-metallic mineral products	44.2	40.3	43.9	2.81	2.11	2.77	124.17	84.94	121.60
Petroleum and coal products	42.0	..	41.9	3.67	..	3.65	153.98	..	153.03
Chemicals and chemical products	41.7	38.5	41.1	3.06	1.79	2.85	127.62	68.98	117.06
Miscellaneous manufacturing industries	42.8	38.0	40.9	2.43	1.54	2.10	104.05	58.72	85.93
Totals, Manufacturing	**41.7**	**38.1**	**40.9**	**2.88**	**1.74**	**2.64**	**120.34**	**66.26**	**108.19**
Durable goods[1]	42.1	39.4	41.8	2.96	1.96	2.86	124.58	77.48	119.63
Non-durable goods[1]	41.3	37.6	40.0	2.77	1.67	2.42	114.58	62.84	96.79
Province									
Newfoundland	40.4	32.9	39.4	2.30	0.98	2.17	92.84	32.07	85.67
Nova Scotia	39.6	36.0	39.0	2.24	1.23	2.08	88.90	44.29	80.88
New Brunswick	42.0	35.0	40.7	2.30	1.20	2.13	96.69	42.09	86.51
Quebec	42.9	38.6	41.7	2.59	1.67	2.36	111.25	64.51	98.61
Montreal	42.6	38.5	41.3	2.72	1.71	2.43	115.83	65.88	100.32
Ontario	42.0	38.2	41.1	3.05	1.82	2.79	128.04	69.65	114.90
Toronto	42.3	38.7	41.1	2.99	1.81	2.65	126.14	70.47	108.91
Manitoba	40.9	36.9	39.8	2.62	1.59	2.36	107.30	58.53	94.20
Saskatchewan	40.4	37.4	40.1	2.94	1.82	2.83	118.90	68.10	113.78
Alberta	39.4	37.5	39.2	2.84	1.78	2.70	112.17	66.77	105.81
British Columbia	38.2	35.0	37.9	3.38	2.10	3.28	128.98	73.62	124.05

[1] The durable goods group includes wood products, furniture and fixtures, primary metal industries, metal fabricating industries, machinery (except electrical), transportation equipment, electrical products and non-metallic mineral products; the non-durable goods group includes all other manufacturing industries.

18.—Average Weekly Hours and Earnings of Salaried Employees and Earnings of Clerical and Other Salaried Classes in Manufacturing, Survey Week 1968

NOTE.—Survey week is the last week of October; based on the revised standard industrial classification.

Industry, Province and Urban Area	All Salaried Employees						Clerical and Related Workers			Other Salaried Employees		
	Average Weekly Hours			Average Weekly Earnings			Average Weekly Earnings			Average Weekly Earnings		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
	No.	No.	No.	$	$	$	$	$	$	$	$	$
Industry												
Foods and beverages	38.7	36.4	38.0	143.84	78.64	125.15	116.52	77.52	93.15	152.35	89.15	149.29
Tobacco processing and products	37.2	36.5	37.0	182.13	100.69	154.88	127.70	91.04	106.18	199.34	121.11	185.64
Rubber products	39.2	37.7	38.9	145.49	94.01	133.67	117.54	90.94	105.61	159.53	125.91	158.26
Leather products	38.7	37.0	38.1	133.84	71.55	110.03	115.24	69.74	86.48	143.20	95.43	140.26
Textile products	38.1	36.9	37.7	158.83	77.81	134.40	114.85	75.65	90.81	173.90	110.06	171.65
Knitting mills	40.3	37.2	38.7	153.79	73.62	113.02	120.65	69.00	81.63	163.86	84.18	140.68
Clothing	38.8	36.8	37.9	139.60	78.27	110.95	115.21	76.14	86.12	147.63	88.23	137.49
Wood products	40.5	38.5	40.1	155.98	80.29	141.61	121.64	79.25	103.27	170.11	100.37	168.99
Furniture and fixtures	39.9	37.8	39.2	148.86	80.52	127.76	116.80	76.05	97.35	172.67	111.04	167.10
Paper and allied industries	36.4	36.5	36.4	182.95	92.63	162.78	129.01	90.68	111.54	207.46	112.71	204.03
Printing, publishing and allied industries	36.2	35.3	35.8	157.12	82.50	126.60	118.78	77.17	91.74	174.72	111.42	166.14
Primary metal industries	38.8	37.2	38.5	183.99	90.82	168.30	133.69	88.69	115.41	202.96	116.87	201.18
Metal fabricating industries	38.7	37.0	38.3	161.39	82.65	141.58	123.14	80.44	103.03	181.85	109.01	179.06
Machinery (except electrical)	39.4	37.5	38.9	160.84	87.02	141.94	127.58	84.82	108.26	181.43	111.06	178.28
Transportation equipment	40.3	38.8	40.0	182.94	100.90	167.05	138.72	99.21	123.25	207.44	136.03	206.24
Electrical products	38.5	38.1	38.4	165.25	87.32	146.03	138.20	84.96	113.47	179.27	109.74	176.12
Non-metallic mineral products	38.4	36.8	38.0	157.69	81.75	141.51	119.60	81.28	101.08	172.57	97.53	171.76
Petroleum and coal products	35.8	35.3	35.7	206.40	95.52	179.13	137.64	93.54	116.53	241.30	131.24	238.52
Chemicals and chemical products	37.8	37.4	37.7	170.67	85.83	149.01	119.18	81.19	97.82	187.07	129.64	184.69
Miscellaneous manufacturing industries	38.3	37.7	38.1	157.96	81.84	137.68	122.74	81.01	98.94	170.45	99.90	168.96
Totals, Manufacturing	**38.5**	**37.0**	**38.1**	**163.56**	**83.56**	**142.06**	**126.05**	**81.99**	**103.03**	**179.58**	**105.38**	**175.85**
Durable goods[1]	39.2	37.8	38.9	168.37	87.28	150.22	130.93	85.86	110.94	187.45	112.59	185.04
Non-durable goods[1]	37.8	36.5	37.4	158.87	82.17	135.54	120.46	79.53	96.34	173.04	102.49	168.49
Province												
Newfoundland	38.7	37.3	38.4	128.94	63.79	117.46	102.71	65.43	89.46	142.63	..	139.28
Nova Scotia	39.2	36.2	38.5	133.65	64.99	116.84	104.33	63.36	84.27	146.88	83.66	144.59
New Brunswick	38.6	36.7	38.2	135.93	64.93	119.53	98.36	61.09	80.23	150.50	93.27	147.31
Quebec	38.0	36.7	37.6	160.66	85.65	140.13	124.39	82.92	103.78	179.21	107.78	174.89
Montreal	37.6	36.6	37.3	166.91	89.65	144.08	129.15	87.16	106.80	..	..	..
Ontario	38.7	37.2	38.3	169.95	86.64	147.10	129.85	84.55	105.15	184.90	107.28	181.40
Toronto	37.8	36.8	37.5	169.89	90.02	145.40	128.72	86.95	103.91	..	..	..
Manitoba	38.4	37.6	38.2	141.60	72.85	120.23	113.94	71.17	91.81	158.76	89.78	154.50
Saskatchewan	39.5	37.9	39.1	141.57	76.74	126.77	113.48	74.60	96.93	157.26	95.68	154.51
Alberta	38.7	37.3	38.3	149.71	80.55	132.35	121.70	79.20	100.47	162.13	94.96	159.47
British Columbia	38.3	36.3	37.8	175.06	87.77	152.60	137.76	84.54	108.61	187.32	108.41	182.69

[1] The durable group includes wood products, furniture and fixtures, ...

Subsection 3.—Estimates of Employment*

Estimates of employees by province and industry are produced by adding together ta from the long-standing employment and earnings survey of larger establishments, m a sample survey of smaller establishments, and from special surveys in the non-com- rcial sector. These estimates are available from 1961 on a monthly basis.

The estimates of employees are more reliable indicators of changes in total employment an the large-establishment employment indexes released in the publication *Employment d Average Weekly Wages and Salaries*. However, the design of the sample survey does t permit the publication of extensive geographic and industrial detail and the large- tablishment employment indexes are the only source of current information of this type.

* More detailed information is given in DBS monthly publication *Estimates of Employees by Province and Industry* atalogue No. 72-008).

—Estimates of Numbers of Employees, by Industrial Division, 1965-69 and by Month 1969

Year and Month	Forestry	Mines, Quarries and Oil Wells	Manufacturing			Construction	Transportation, Communication and Other Utilities
			Durables	Non-durables	Total		
	'000	'000	'000	'000	'000	'000	'000
nual Average—							
965	71.7	114.2	742.3	807.5	1,549.8	356.6	616.4
966	72.6	116.8	793.5	841.8	1,635.3	379.6	634.8
967	71.1	118.5	794.6	847.9	1,642.5	363.4	652.1
968	64.5	120.4	785.1	854.1	1,639.2	361.3	642.3
969	64.9	119.5	819.9	871.5	1,691.4	377.2	662.9
9—							
anuary	47.4	120.2	796.4	839.5	1,635.9	316.1	632.9
ebruary	47.1	120.6	803.0	847.4	1,650.4	321.8	637.6
Iarch	44.9	121.7	812.4	845.7	1,658.1	323.9	640.0
pril	43.7	119.6	817.4	850.9	1,668.3	346.7	639.2
Iay	64.2	118.8	830.7	872.5	1,703.2	364.2	671.3
une	79.2	124.2	844.0	894.4	1,738.4	390.6	682.3
uly	80.4	116.9	810.1	880.7	1,690.8	422.1	673.6
ugust	81.6	117.5	821.3	911.4	1,732.7	438.9	691.3
eptember	80.3	114.2	820.7	902.0	1,722.7	432.0	685.7
ctober	77.5	113.6	829.4	892.8	1,722.2	428.3	672.5
Iovember	72.2	124.1	835.8	873.2	1,709.0	401.7	670.5
December	60.5	122.9	817.5	847.7	1,665.3	340.9	654.6

Year and Month	Trade	Finance, Insurance and Real Estate	Personal Services			Public Administration	Total, Specified Industries
			Commercial Sector	Non-commercial Sector	Total		
	'000	'000	'000	'000	'000	'000	'000
nual Average—							
965	872.5	238.9	498.0	864.1	1,362.2	362.0	5,523.5
966	920.2	248.8	545.5	913.1	1,458.7	375.6	5,814.0
967	949.4	265.6	582.1	985.4	1,567.5	399.1	6,017.7
968	984.5	280.7	611.3	1,068.0	1,679.3	408.1	6,189.3
969	1,061.7	300.1	689.7	1,122.0	1,811.7	420.1	6,516.0
9—							
anuary	1,004.5	288.8	631.1	1,118.3	1,749.4	406.7	6,207.8
ebruary	1,006.3	289.7	638.7	1,121.1	1,759.8	408.6	6,248.8
Iarch	1,019.2	293.6	648.4	1,118.2	1,766.6	406.0	6,274.0
pril	1,026.7	298.9	654.9	1,132.3	1,787.2	398.9	6,329.1
Iay	1,052.5	298.5	686.6	1,129.5	1,816.1	408.9	6,508.5
une	1,071.3	301.9	726.2	1,128.5	1,854.7	422.9	6,665.9
uly	1,046.6	313.1	737.9	1,108.5	1,846.4	440.2	6,639.1
ugust	1,074.7	303.4	743.6	1,080.3	1,823.9	443.7	6,716.7
eptember	1,093.4	301.3	720.0	1,109.9	1,829.9	433.6	6,702.2
ctober	1,104.9	302.8	714.4	1,116.4	1,830.8	427.1	6,685.8
Iovember	1,126.5	304.1	699.1	1,144.5	1,843.6	422.7	6,679.4
December	1,122.1	305.2	674.0	1,165.3	1,839.3	422.5	6,538.3

Subsection 4.—Estimates of Labour Income*

Labour income, as shown in Table **20**, is the compensation paid to employees for se vices rendered either as wages and salaries or as supplementary labour income. Wag and salaries include directors' fees, bonuses, commissions, taxable allowances and benefi some imputed earnings (e.g., those for persons in religious orders) and living allowanc considered to be an additional benefit to the employee. Supplementary labour incom which consists of payments made by employers for the future benefit of employees, composed of employers' contributions to employee welfare and pension funds, to t Workmen's Compensation Fund and to the Unemployment Insurance Fund.

* More detailed information is given in DBS publication *Estimates of Labour Income* (Catalogue No. 72-005).

20.—Wages and Salaries, by Industry, and Supplementary Labour Income, 1965-69, and by Month 1969

NOTE.—Based on the 1960 standard industrial classification. Figures are unadjusted for seasonal variation.

(Millions of dollars)

Year and Month	Agriculture	Forestry	Mining	Manufacturing	Construction	Transportation, Communication and Other Utilities	Trade
Annual Average—							
1965	287	387	697	7,981	2,262	3,139	3,662
1966	298	423	765	8,898	2,660	3,402	4,037
1967	327	453	846	9,517	2,771	3,830	4,402
1968	344	434	919	10,167	2,855	4,106	4,847
1969	352	468	959	11,258	3,112	4,575	5,482
1969—							
January	18.9	26.3	80.5	881.8	211.7	355.2	425.3
February	18.7	28.2	81.6	896.2	225.9	351.4	426.4
March	20.8	29.8	82.7	909.7	220.9	359.6	433.3
April	24.3	26.9	79.6	914.6	237.6	366.8	440.2
May	29.1	37.6	79.6	938.2	252.8	374.9	449.9
June	34.6	43.6	80.5	958.4	255.7	396.0	462.6
July	40.4	48.1	78.7	943.6	279.4	396.0	454.2
August	45.2	48.6	76.7	948.1	300.0	405.7	454.2
September	39.9	49.3	75.1	968.3	303.0	399.2	470.3
October	32.2	47.2	76.8	964.2	296.2	393.0	478.5
November	25.9	44.8	80.9	971.2	286.3	392.4	492.0
December	21.7	37.6	86.8	963.8	242.8	384.3	495.1

Year and Month	Finance, Insurance and Real Estate	Service	Public Administration and Defence[1]	Total Wages and Salaries[2]	Supplementary Labour Income	Total Labour Income
Annual Average—						
1965	1,447	5,231	1,830	26,950	1,231	28,181
1966	1,594	6,040	2,074	30,219	1,688	31,907
1967	1,827	7,053	2,386	33,440	1,835	35,275
1968	2,051	8,067	2,637	36,458	2,035	38,493
1969	2,354	9,314	3,066	40,969	2,234	43,203
1969—						
January	184.5	726.9	234.0	3,145.9	161.2	3,307.1
February	185.6	736.2	243.4	3,194.5	182.6	3,377.1
March	188.2	743.8	230.3	3,220.3	183.1	3,403.4
April	191.7	754.3	233.5	3,271.0	185.3	3,456.3
May	196.1	766.7	239.5	3,367.3	185.0	3,552.3
June	200.9	785.5	259.2	3,481.2	205.6	3,686.8
July	201.7	784.5	286.1	3,517.5	199.5	3,717.0
August	199.5	781.6	276.0	3,539.6	197.0	3,736.6
September	197.1	791.0	273.2	3,569.5	191.7	3,761.2
October	200.7	796.6	262.6	3,550.0	188.2	3,738.2
November	203.0	822.3	264.2	3,584.6	179.0	3,763.6
December	204.7	824.7	264.1	3,527.6	176.1	3,703.7

[1] Excludes military pay and allowances. [2] Includes fishing and trapping.

Section 4.—Wage Rates, Hours of Labour and Other Working Conditions

Statistics on occupational wage rates by industry and locality, with standard weekly hours of labour, are compiled by the Canada Department of Labour and published in the annual report *Wage Rates, Salaries and Hours of Labour*. The statistics are based on an annual survey covering some 35,000 establishments in most industries and apply to the last normal pay period preceding Oct. 1. Average wage rates of time workers and average straight-time earnings of piece workers and other incentive workers for selected occupations are shown separately in the report but are combined in the calculation of industry index numbers shown in Table **21**. Predominant ranges of rates for each occupation used are also given; overtime pay is excluded.

The index numbers of Table **21** measure changes in wage rates for non-office employees below the rank of foreman. They do not, however, provide a basis for comparing the level of wages in one industry with that in another. Information on concepts and methods of developing these statistics is given in the annual report.

21.—Index Numbers of Average Wage Rates for Certain Main Industrial Groups, 1961-69

(1961=100)

NOTE.—Figures for years prior to 1961 are not available on the 1961 base; indexes for 1956-65 on the 1949 base are given in the 1967 Year Book at p. 763 and indexes back to 1901 on the same base appear in the Department of Labour publication *Wage Rates, Salaries and Hours of Labour 1965*.

Year	Logging	Mining	Manufacturing			Construction	Transportation, etc.	Trade	Service	Local Government	General Index
			Durable Goods	Non-durable Goods	All Manufacturing						
1961	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1962	103.9	104.0	102.1	103.3	102.7	105.0	103.1	103.5	101.9	103.3	103.1
1963	110.1	107.0	105.1	106.7	106.0	109.1	106.0	107.9	106.6	107.4	107.0
1964	117.5	109.6	108.9	110.5	109.7	113.9	109.8	111.0	111.7	111.5	110.9
1965	126.4	113.3	114.4	115.5	115.0	119.8	114.3	116.9	118.4	118.1	116.5
1966	140.2	122.7	121.2	121.9	121.6	129.8	122.3	123.9	125.5	124.6	124.0
1967	156.0	130.2	130.0	131.0	130.5	142.0	132.8	132.5	133.9	136.9	133.4
1968	162.5	138.9	139.7	141.4	140.6	154.9	143.4	144.5	141.8	146.7	143.8
1969	179.8	146.2	149.7	152.5	151.2	167.0	154.9	155.2	154.0	163.4	155.1

22.—Average Wage and Salary Rates for Selected Occupations in Certain Cities Across Canada, Oct. 1, 1969

Industry and Occupation	Halifax, N.S.	Saint John, N.B.	Sherbrooke, Que.	Montreal, Que.	Toronto, Ont.	Hamilton, Ont.
	$ per hr.	$ per hr.	$ per hr.	$ per hr.	$ per hr.	$ per hr.
Construction (building and structures only)–						
Bricklayer and mason	4.20	3.95	3.80	4.59	5.00	4.83
Bulldozer operator	2.70	3.20	3.50	3.75	4.45	4.50
Carpenter	3.35	3.35	3.60	4.37	4.75	5.00
Cement finisher	3.00	—	3.35	4.13	4.30	4.10
Crane operator	2.90	3.70	3.40	4.48	5.00	5.00
Electrician	3.78	3.75	3.65	4.80	5.40	5.59
Labourer	2.60	2.35	3.10	3.87	3.50	3.55
Marble and tile setter	3.85	3.95	3.70	4.59	4.12	4.00
Painter (brush)	3.00	3.00	3.50	4.37	4.10	3.80
Plasterer	3.68	3.95	3.80	4.59	4.60	4.83
Plumber	4.26	3.95	3.90	4.80	5.37	5.65
Sheet metal worker	4.00	3.55	3.90	4.58	5.24	4.85

22.—Average Wage and Salary Rates for Selected Occupations in Certain Cities Across Canada, Oct. 1, 1969—continued

Industry and Occupation	Halifax, N.S.	Saint John, N.B.	Sherbrooke, Que.	Montreal, Que.	Toronto, Ont.	Hamilton, Ont.
	$ per hr.	$ per hr.	$ per hr.	$ per hr.	$ per hr.	$ per hr.
Manufacturing and Other Industries[1]						
General labourer, male	2.18	2.18	2.16	2.38	2.53	2.63
Maintenance Trades—						
Carpenter	2.86	2.62	2.77	3.16	3.40	3.41
Electrician	3.09	3.27	3.18	3.49	3.70	3.74
Machinist	3.11	3.12	2.93	3.41	3.60	3.72
Mechanic	2.82	3.04	2.82	3.38	3.39	3.47
Millwright	3.67	3.27	2.98	3.38	3.65	3.82
Pipefitter	3.34	3.45	3.19	3.62	3.78	3.63
Tool and die maker	—	—	2.86	3.48	3.94	3.63
Welder	3.03	2.90	2.78	3.23	3.32	3.60
Service Occupations—						
Truck driver, light and heavy	2.28	2.18	2.39	2.81	3.00	2.97
Trucker, power	2.14	2.51	2.20	2.81	2.90	3.04
Office Occupations, Male—	per wk.	per wk.	per wk.	per wk.	per wk.	per wk.
Bookkeeper, senior	111	120	123	133	140	143
Clerk, intermediate	96	99	96	103	105	118
Clerk, senior	127	122	118	134	135	147
Clerk, order	96	96	101	112	119	129
Draughtsman, intermediate	117	126	128	130	137	134
Draughtsman, senior	154	164	156	164	171	164
Office Occupations, Female—						
Clerk, intermediate	83	86	83	89	91	91
Machine Operator—						
Bookkeeping	69	66	71	78	85	80
Calculating	70	73	64	81	86	81
Secretary, senior	94	91	86	110	110	106
Stenographer, junior	73	77	74	82	84	85
Stenographer, senior	85	83	94	96	97	100
Switchboard operator and receptionist	68	65	72	78	84	81
Typist, junior	64	57	62	70	75	75
Typist, senior	75	71	74	83	87	83

	Winnipeg, Man.	Regina, Sask.	Saskatoon, Sask.	Calgary, Alta.	Edmonton, Alta.	Vancouver, B.C.
	$ per hr.	$ per hr.	$ per hr.	$ per hr.	$ per hr.	$ per hr.
Construction (building and structures only)—						
Bricklayer and mason	4.30	4.00	4.00	4.20	4.20	4.77
Bulldozer operator	—	3.50	3.25	3.80	3.65	4.60
Carpenter	4.10	3.70	3.70	4.20	4.20	4.88
Cement finisher	3.45	2.83	3.08	3.75	3.85	4.50
Crane operator	3.05	4.05	3.50	4.45	4.35	4.96
Electrician	4.40	4.15	4.15	4.55	4.55	5.45
Labourer	3.00	2.78	2.78	3.25	3.25	4.07
Marble and tile setter	3.80	3.30	3.60	4.15	4.15	4.69
Painter (brush)	3.45	3.40	3.40	3.30	3.50	4.92
Plasterer	3.80	4.10	4.20	4.15	4.15	5.25
Plumber	4.40	4.40	4.40	4.70	4.60	5.34
Sheet metal worker	3.90	4.30	3.76	4.55	4.55	5.25
Manufacturing and Other Industries[1]						
General labourer, male	2.41	2.44	2.43	2.56	2.55	2.98
Maintenance Trades—						
Carpenter	3.27	3.07	3.03	3.60	3.50	3.71
Electrician	3.45	3.67	3.57	3.91	3.74	4.03
Machinist	3.29	3.68	3.57	3.52	3.62	3.84
Mechanic	3.26	3.13	3.34	3.46	3.45	3.83
Millwright	3.35	3.56	3.36	3.57	3.68	3.95
Pipefitter	3.42	3.78	3.34	3.90	3.73	4.05
Tool and die maker	3.21	—	—	3.47	3.34	4.09
Welder	3.25	3.49	3.30	3.55	3.49	3.93
Service Occupations—						
Truck driver, light and heavy	2.44	2.37	2.64	2.69	2.67	3.43
Trucker, power	2.74	2.66	2.72	2.74	2.79	3.55

[1] "Other Industries" consists of logging; mining; transportation (all sectors including air transportation), storage and communication (including radio and TV); public utilities; trade; finance; and government and personal service.

22.—Average Wage and Salary Rates for Selected Occupations in Certain Cities Across Canada, Oct. 1, 1969—concluded

Industry and Occupation	Winnipeg, Man.	Regina, Sask.	Saskatoon, Sask.	Calgary, Alta.	Edmonton, Alta.	Vancouver, B.C.
	$ per wk.	$ per wk.	$ per wk.	$ per wk.	$ per wk.	$ per wk.
ffice Occupations, Male—						
Bookkeeper, senior	125	122	126	145	132	142
Clerk, intermediate	96	90	103	113	100	107
Clerk, senior	128	119	122	144	135	139
Clerk, order	104	107	92	106	109	122
Draughtsman, intermediate	120	114	129	135	129	139
Draughtsman, senior	166	143	145	165	156	162
ffice Occupations, Female—						
Clerk, intermediate	82	83	88	90	89	92
Machine Operator—						
Bookkeeping	75	74	72	77	76	83
Calculating	79	86	75	79	81	90
Secretary, senior	100	100	99	109	104	106
Stenographer, junior	74	78	76	78	78	82
Stenographer, senior	89	85	87	92	93	94
Switchboard operator and receptionist	72	71	71	77	76	82
Typist, junior	66	66	68	70	70	71
Typist, senior	79	80	76	82	81	84

Table **23** gives summary data on working conditions of plant and office employees in anufacturing industries and all industries for the years 1967-69. The percentages in his table denote the proportions that employees—plant or office—of establishments report- ng specific items bear to the total number of all such employees in all establishments eplying to the survey; they are not necessarily the proportions of employees actually overed by the various items. Further details and additional information are given n the annual report *Working Conditions in Canadian Industry,* compiled and published by he Canada Department of Labour and based on a survey at May 1 each year of some 5,000 reporting units.

23.—Summary of Selected Working Conditions of Non-office and Office Employees in Manufacturing and All Industries, 1967-69

Item	1967		1968		1969	
	Manufacturing Industries	All Industries	Manufacturing Industries	All Industries	Manufacturing Industries	All Industries
	Coverage					
on-office Employees—						
Reporting establishments... No.	9,227	21,410	9,136	21,606	8,980	21,381
Employees..... "	996,705	2,257,042	971,184	2,246,546	988,803	2,246,113
ffice Employees—						
Reporting establishments... No.	9,257	22,556	9,222	22,953	9,079	22,986
Employees..... "	346,136	1,107,209	361,993	1,201,492	358,360	1,234,264
	Percentages of Non-office Employees					
tandard Weekly Hours—						
40 and under	80	79	81	80	82	81
Over 40 and under 44	6	4	6	4	6	4
44	2	3	2	3	2	3
45	6	5	6	4	6	4
Over 45 and under 48	1	1	1	1	1	1
48	2	4	2	3	2	3
Over 48	2	3	2	2	2	2

23.—Summary of Selected Working Conditions of Non-office and Office Employees in Manufacturing and All Industries, 1967-69—concluded

Item	1967		1968		1969	
	Manufacturing Industries	All Industries	Manufacturing Industries	All Industries	Manufacturing Industries	All Industries
	Percentages of Non-office Employees—concluded					
Employees on a five-day week	93	87	94	88	95	89
Vacations with Pay—						
Two weeks	95	91	97	92	97	93
After: 1 year or less	*44*	*60*	*49*	*64*	*59*	*69*
2 years	*12*	*10*	*15*	*10*	*13*	*9*
3 years	*27*	*15*	*25*	*14*	*21*	*12*
4-5 years	*8*	*5*	*6*	*3*	*3*	*2*
Other periods	*3*	*1*	*2*	*1*	*1*	*1*
Three weeks	80	81	83	84	83	83
After: Less than 10 years	*26*	*38*	*31*	*45*	*41*	*51*
10 years	*31*	*21*	*33*	*21*	*31*	*23*
11-14 years	*9*	*10*	*7*	*8*	*5*	*3*
15 years	*12*	*10*	*10*	*7*	*7*	*6*
Over 15 years	*2*	*1*	*1*	*1*	*1*	*1*
Four weeks	57	60	61	64	64	66
After: Less than 25 years	*40*	*40*	*45*	*48*	*47*	*48*
25 years	*13*	*15*	*11*	*8*	*6*	*6*
More than 25 years and/or other provisions	*4*	*4*	*5*	*9*	*10*	*12*
Paid Statutory Holidays	97	96	98	96	98	96
6 or less	*7*	*7*	*6*	*6*	*5*	*5*
7	*7*	*5*	*6*	*4*	*5*	*4*
8	*42*	*35*	*35*	*30*	*30*	*26*
9	*29*	*23*	*34*	*28*	*38*	*32*
More than 9	*13*	*25*	*18*	*28*	*20*	*29*
	Percentages of Office Employees					
Standard Weekly Hours—						
Under 37½	29	34	28	34	30	34
37½	43	40	43	42	44	43
Over 37½ and under 40	5	2	4	2	4	2
40	21	22	21	18	20	19
Over 40	2	2	2	2	1	2
Employees on a five-day week	98	97	98	97	99	98
Vacations with Pay—						
Two weeks	98	86	98	85	99	83
After: 1 year or less	*91*	*82*	*90*	*82*	*93*	*80*
2 years	*5*	*3*	*5*	*3*	*4*	*2*
3 years	*2*	*1*	*2*	*1*	*2*	*1*
5 years	*1*	—	*1*	—	—	—
Other periods	—	—	—	—	—	—
Three weeks	90	92	91	93	92	94
After: Less than 10 years	*34*	*55*	*40*	*61*	*47*	*66*
10 years	*40*	*23*	*40*	*21*	*38*	*22*
11-14 years	*7*	*7*	*4*	*5*	*3*	*2*
15 years	*8*	*6*	*6*	*5*	*4*	*4*
Over 15 years	*1*	*1*	*1*	—	—	—
Four weeks	69	76	75	80	78	82
After: Less than 25 years	*50*	*51*	*56*	*57*	*61*	*63*
25 years	*13*	*20*	*12*	*15*	*8*	*10*
More than 25 years and/or other provisions	*6*	*4*	*7*	*7*	*10*	*9*
Paid Statutory Holidays	100	100	99	99	100	100
1-6	*2*	*2*	*2*	*1*	*1*	*1*
7	*3*	*2*	*3*	*2*	*2*	*2*
8	*41*	*30*	*31*	*21*	*44*	*17*
9	*39*	*26*	*43*	*28*	*52*	*34*
More than 9	*15*	*39*	*21*	*46*	*2*	*46*

Wages of Farm Labour.—The information on farm wages is provided by volunteer m correspondents located in all provinces except Newfoundland. The rates presented Table 24 are average wages paid to all farm help regardless of age and skill. Because rates reported may cover a wide range of skills, of types of work and of ages of hired kers, the value of the resulting data is considered to be an indicator of trends rather than easure of absolute wage levels.

24.—Average Daily and Monthly Wages of Male Farm Help as at Jan. 15, May 15 and Aug. 15, 1968-70

vince and Year	Jan. 15				May 15				Aug. 15			
	Daily		Monthly		Daily		Monthly		Daily		Monthly	
	With Board	Without Board	With Board	Without Board	With Board	Without Board	With Board	Without Board	With Board	Without Board	With Board	Without Board
	$	$	$	$	$	$	$	$	$	$	$	$
itime Provinces—												
68	7.00	9.00	150.00	201.00	7.40	9.20	160.00	205.00	7.60	9.50	164.00	211.00
69	8.00	9.70	175.00	230.00	8.10	10.00	180.00	230.00	8.40	10.15	185.00	232.00
70	8.10	10.10	195.00	245.00	8.30	10.60	194.00	239.00	8.90	10.70	200.00	244.00
ebec—												
68	8.00	9.90	155.00	210.00	8.10	10.10	165.00	221.00	8.30	10.50	170.00	225.00
69	8.40	10.30	170.00	226.00	8.70	10.40	177.00	231.00	8.70	10.90	185.00	235.00
70	8.50	11.00	180.00	236.00	8.90	11.20	183.00	235.00	9.00	11.20	180.00	230.00
tario—												
68	8.80	10.90	191.00	262.00	9.40	11.70	220.00	282.00	10.30	12.50	233.00	289.00
69	10.10	12.20	234.00	275.00	10.50	12.50	249.00	293.00	10.60	12.90	250.00	300.00
70	10.40	12.70	255.00	306.00	10.70	13.60	264.00	319.00	11.20	13.50	267.00	309.00
nitoba—												
68	8.40	10.70	176.00	238.00	9.60	11.80	216.00	264.00	9.50	11.80	211.00	263.00
69	8.70	11.10	202.00	244.00	10.20	12.40	240.00	289.00	10.50	13.10	235.00	287.00
70	9.10	11.60	214.00	265.00	9.60	12.30	234.00	284.00	10.50	13.00	238.00	294.00
katchewan—												
68	8.70	11.00	177.00	239.00	10.20	12.30	232.00	282.00	10.50	12.50	238.00	285.00
69	9.00	11.30	196.00	248.00	10.60	12.50	247.00	290.00	11.00	13.10	250.00	292.00
70	9.30	11.70	202.00	257.00	10.00	12.30	237.00	280.00	10.60	13.00	247.00	292.00
erta—												
68	8.70	10.90	187.00	254.00	10.00	12.20	230.00	276.00	10.40	12.80	234.00	280.00r
69	10.00	12.00	218.00	270.00	11.00	13.10	251.00	294.00	10.80	13.00	244.00	292.00
70	10.20	12.50	238.00	298.00	10.60	13.10	250.00	295.00	11.00	13.40	253.00	305.00
tish Columbia—												
68	9.60	12.10	206.00	300.00	10.20	12.40	240.00	296.00	10.10	12.20	248.00	300.00
69	10.40	12.50	248.00	317.00	10.60	13.00	270.00	315.00	10.60	13.00	275.00	331.00
70	11.00	13.50	283.00	356.00	10.90	13.20	301.00	350.00	11.50	13.90	290.00	345.00
ada—												
68	**8.20**	**10.20**	**181.00**	**247.00**	**9.30**	**11.30**	**220.00**	**268.00**	**9.60**	**11.60**	**224.00**	**271.00**
69	**9.40**	**11.50**	**210.00**	**269.00**	**10.20**	**12.20**	**236.00**	**282.00**	**10.30**	**12.50**	**237.00**	**285.00**
70	**9.70**	**12.00**	**227.00**	**282.00**	**10.10**	**12.60**	**242.00**	**291.00**	**10.60**	**12.90**	**245.00**	**292.00**

Section 5.—Pension Plans*

Very few pension plans in Canada have been in existence for more than 25 years and st of the older plans were established by governments, banks and railways. The greatest owth in pension plans and coverage began during World War II and continued through

* Prepared by the Pension Plans Section, Labour Division, Dominion Bureau of Statistics.

the postwar years. In 1960 there were 9,000 pension plans in Canada covering so 1,800,000 persons and by 1969 the number of plans had increased to an estimated 18,4 covering some 2,441,000 persons.

Up to 1948, most plans were of the insured type, being underwritten by either insurance company or the Government Annuities Branch of the Canada Department Labour. The trust fund arrangement then began to grow in popularity and is now t dominant instrument for funding pension benefits measured in terms of membership a assets held. In 1969, contributions to trusteed pension funds alone amounted $961,000,000, accounting for over 75 p.c. of all contributions to private pension pla excluding government plans having no invested assets. Funds of this magnitude represe a major medium for personal savings and the investment of these funds exerts a consid able influence on the capital market.

Table **25** shows the distribution of pension business for the years 1965-69, excludi the public service superannuation funds of the Federal Government and of six provinc governments which are nominal funds only, having no invested assets.

Most trusteed pension plans use the facilities of corporate trustees (trust companie who invest the contributions, accumulate the earnings and pay benefits to the plan me bers. Trusteed pension plan funds are also managed by individual trustees or pensi fund societies. The designated trustee, corporate or individual, must invest the cont butions in accordance with the trust agreement which sets forth the rights and duties the trustee. Many of the small funds invest in the "pooled funds" of trust companies whi combine the assets of many pension funds, thus providing the diversification of investmen usually available only to larger funds.

25.—Distribution of Pension Business among Trusteed Funds, Life Insurance Compa Annuities and Government Annuities, 1965-69

Item and Year	Trusteed Pension Funds	Life Insurance Group Annuities[1]	Federal Governme Group Annuities
	No.	No.	No.
Funds—			
1965	2,997	10,866	1,267
1966	3,467	11,459	1,416
1967	3,789	11,718	1,398
1968	4,065	12,891	1,365
1969	4,072	13,209	1,110
Plan Members—			
1965	1,467,424	580,984	141,579
1966	1,554,891	563,579	122,576
1967	1,603,079	598,427	116,892
1968	1,655,962	616,911	111,503
1969	1,719,423	616,312	105,187
Contributions—	$'000,000	$'000,000	$'000,000
1965	674	217	7
1966	692	174	5
1967	748	177	4
1968	863	194	4
1969	961	171	4
Assets (book value)—			
1965	6,541	2,333	634
1966	7,250	2,491	644
1967	8,068	2,668	636
1968	8,972	2,891	635
1969	10,003	3,062	634

[1] Excludes segregated pension plan funds, with assets of $400,507,000 in 1969.

26.—Trusteed Pension Funds, Income, Expenditures and Assets, 1965-69

Item	1965	1966	1967	1968	1969
	No.	No.	No.	No.	No.
ust Arrangements—					
a) Corporate trustees	2,306	2,530	2,737	2,962	2,996
b) Individual trustees	625	862	975	1,018	981
c) Combinations of (a) and (b)	32	42	46	53	63
d) Pension fund societies	34	33	31	32	32
Totals, Trusteed Funds	**2,997**	**3,467**	**3,789**	**4,065**	**4,072**
	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000
ome—					
otal contributions	674	692	748	863	961
Employer	*403*	*431*	*474*	*557*	*591*
Employee	*271*	*261*	*274*	*306*	*370*
nvestment income	306	348	386	429	475
Net profit on sale of securities	11	7	19	32	48
ther	7	19	9	7	10
Totals, Income	**998**	**1,066**	**1,162**	**1,331**	**1,494**
penditures—					
ension payments out of funds	197	227	257	295	333
ost of pension purchased	8	11	11	9	11
ash withdrawals	84	106	82	82	95
dministration costs	5	6	7	8	9
Net loss on sale of securities	2	7	6	11	10
ther expenditures	7	16	6	20	18
Totals, Expenditures	**303**	**373**	**369**	**425**	**476**
sets (book value)—					
nvestment in pooled funds	428	513	610	680	749
nvestment in mutual funds	32	36	40	45	52
onds	4,182	4,487	4,761	5,014	5,285
Bonds of or guaranteed by Government of Canada	*511*	*488*	*479*	*491*	*503*
Bonds of or guaranteed by provincial governments	*2,014*	*2,218*	*2,368*	*2,537*	*2,707*
Bonds of Canadian municipal governments, school boards, etc	*647*	*682*	*697*	*705*	*733*
Other Canadian	*1,006*	*1,090*	*1,207*	*1,269*	*1,326*
Non-Canadian	*4*	*9*	*10*	*12*	*16*
tocks	989	1,217	1,514	1,954	2,425
Canadian, common	*791*	*933*	*1,125*	*1,379*	*1,715*
Canadian, preferred	*29*	*49*	*56*	*66*	*76*
Non-Canadian, common	*169*	*234*	*330*	*502*	*628*
Non-Canadian, preferred	*--*	*1*	*3*	*7*	*6*
lortgages	623	676	724	776	863
Insured residential (NHA)	*371*	*376*	*366*	*380*	*437*
Conventional	*252*	*300*	*358*	*396*	*426*
eal estate and lease-backs	44	41	49	51	52
iscellaneous—					
Cash on hand and in chartered banks	103	118	85	104	105
Guaranteed investment certificates	18	27	44	72	100
Short-term investments	32	33	56	85	173
Accrued interest and dividends receivable	56	64	68	75	80
Accounts receivable	32	37	115	114	115
Other assets	2	1	2	2	4
Totals, Assets	**6,541**	**7,250**	**8,068**	**8,972**	**10,003**

Federal Government Annuities.—Since 1908 the Federal Government has sold nuities and industrial pension plans under the Government Annuities Act (RSC 1952, 132). The purpose of the introduction of this legislation was to encourage people to e for old age but since the need for government service in this form has decreased in ent years, reduction of the program became justified and the employment of salesmen solicit business was ended on Nov. 30, 1967. Annuities are still available under the t to those who ask for them. They are now administered by the Unemployment Insurce Commission.

Section 6.—Unemployment Insurance*

During the depression of the 1930s the need for a nation-wide unemployment insuran program became recognized. In 1935 the Employment and Social Insurance Act w passed by the Federal Parliament but was subsequently declared invalid by the Priv Council. Later, by consent of the provinces, an amendment to the British North Ameri Act was obtained empowering the Federal Parliament to legislate on unemployment insu ance and in 1940 the Unemployment Insurance Act was passed, making provision for compulsory contributory unemployment insurance program at the national level and al for the establishment of a national employment service to operate in conjunction with a ancillary to the unemployment insurance operations. The Act came into effect on July 1941; amended on several occassions, it was replaced by a new Unemployment Insuran Act, effective Oct. 2, 1955.† On Apr. 1, 1965, the operation of the National Employme Service was transferred to the Department of Labour and on Jan. 1, 1966 to the Departme of Manpower and Immigration (see pp. 843-844).

Legislation provides for a compulsory insurance program administered by the Feder Government, and requires employers to join with their insurable employees and the Gover ment in building up a fund. This fund is held in trust by the Unemployment Insuran Commission for the payment of benefit to eligible unemployed persons. The Act is admin stered by a Commission of three persons appointed by the Governor in Council, of who one is the Chief Commissioner; one Commissioner, other than the Chief Commissioner, appointed after consultation with employer organizations and the other after consultatio with employee organizations.

The Unemployment Insurance Act applies to all persons employed under a contra of service‡ except: the Canadian Armed Forces; the permanent public service of t Federal Government; provincial government employees except where insured with t concurrence of the government of the province; certified permanent employees of municip or public authorities; persons engaged in hunting and trapping, private domestic servic private-duty nursing, and teaching; workers on other than an hourly, daily or piece ra earning more than $7,800 a year effective June 30, 1968, unless they elect to continue insured persons; employees in a charitable institution or in a hospital not carried on f purpose of gain except where the institution or hospital consents to insure certain groups classes of persons with the concurrence of the Commission. All persons paid by the hou day, or at a piece rate (including a mileage rate) are insured regardless of amount of earning

The amount of the employee contribution is determined by the employee's week earnings; an equal contribution is required from the employer. The Federal Governme contributes one fifth of the aggregate employer-employee contribution and defrays admin strative expenses. Contributions became payable on July 1, 1941. Benefit became pay able on Jan. 27, 1942 and by Mar. 31, 1969 a total of $6,262,000,000 had been paid.

The following statement shows the current weekly rates of contribution and benef effective June 30, 1968. The weekly contribution is based on actual earnings in the week irrespective of the number of days worked. The benefit rates are calculated on the averag weekly contributions for the last 30 weeks in the 104 weeks preceding claim. In order t qualify for regular benefit, a claimant must have at least 30 weekly contributions in the la 104 weeks prior to claim, eight weekly contributions since the start of the last precedin

* Prepared by the Unemployment Insurance and Manpower Section, Labour Division, Dominion Bureau Statistics; statistics of unemployment insurance are compiled and published by the DBS from material supplie by the Unemployment Insurance Commission.

† Copies of the 1955 Act incorporating subsequent amendments are available from Information Canada, Ottaw (Catalogue No. YX92-222/50).

‡ Commencing Apr. 1, 1957, coverage was extended to persons engaged in fishing, notwithstanding the fact tha such persons are not employees of any other person but are usually self-employed; commencing Apr. 1, 1967, coverag was extended to employees engaged in agriculture and horticulture.

gular benefit period or in the last year prior to claim, whichever is the shorter period, and weekly contributions since the start of the last preceding benefit period, or in the year ior to the claim, whichever is the longer period.

WEEKLY RATES OF CONTRIBUTION AND BENEFIT UNDER THE UNEMPLOYMENT INSURANCE ACT, IN EFFECT FROM JUNE 30, 1968

NOTE.—Weekly rates in effect from Oct. 2, 1955 to June 30, 1968 are given in the 1962 Year Book, p. 738 and the 7 edition, p. 769.

Range of Weekly Earnings	Weekly Employee Contribution	Range of Average Weekly Contributions	Weekly Rates of Benefit		Earnings not Deducted	
			Person Without Dependant	Person With Dependant	Person Without Dependant	Person With Dependant
	cts.	cts.	$	$	$	$
ss than $20	10[1]	Less than 28	13	17	7	9
0 and under $ 30	20	28 and under 43	16	21	8	11
0 " " 40	35	43 " " 58	19	25	10	13
0 " " 50	50	58 " " 73	22	29	11	15
0 " " 60	65	73 " " 88	26	33	13	17
0 " " 70	80	88 " " $1.03	30	38	15	19
0 " " 80	95	$1.03 " " $1.18	34	43	17	22
0 " " 90	110	$1.18 " " $1.33	38	48	19	24
0 " " 100	125	$1.33 or over	42	53	21	27
0 or over	140					

[1] A half stamp.

The Act contains a special provision whereby the regular contribution requirements re relaxed somewhat during a 5½-month period commencing with the first week of Decemer each year. Under this provision, claimants unable to fulfil the contribution requirenents for regular benefit may draw "seasonal benefit" if they have at least 15 contribution eeks during the fiscal year, or, failing this, if they terminated regular benefit since the revious mid-May.

Statistics on the Operation of the Act.—In order to assess the impact of changing economic onditions on the insurance program, provision is made for collection of current operational ata, such as claims filed and processed and payments made. This information is published nonthly in the *Statistical Report on the Operation of the Unemployment Insurance Act* Catalogue No. 73-001). Current claims and payment data are useful for administrative urposes and are also a source of information to the public regarding financial and other spects of the program.

Persons wishing to draw benefit must file either an initial or a renewal claim. Where t is necessary to compute entitlement to benefit, an initial claim is taken, otherwise a enewal. In the main, initial and renewal claims combined are an approximation of ecorded separations from employment during a month. However, if a claimant exhausts is benefit and wishes to be reconsidered for further benefit, an initial claim is required. uch claims, accounting for approximately 15 p.c. of the monthly volume in 1969, are ot new cases of unemployment. The count of claimants at the month-end indicates the xtent to which claimants maintain contact with local offices of the Commission.

27.—Amount Paid, 1956-69, and Claims Filed, Claimants and Amount Paid, by Month, 19

Year	Amount Paid	Month	Initial and Renewal Claims Filed	Claimants at Month-End	Amount Paid
	$'000		'000	'000	$'000
		1969			
1956	210,330				
1957	305,076	January	267	616	61,240
1958	492,901	February	169	631	67,394
1959	406,097	March	158	594	66,441
1960	481,836	April	155	527	61,891
1961	493,971	May	125	305	52,849
		June	91	277	26,496
1962	409,208	July	121	279	24,787
1963	394,163	August	87	268	27,745
1964	344,390	September	90	260	24,008
1965	312,110	October	124	280	25,527
1966	295,301	November	165	349	27,555
		December	301	537	33,060
1967	352,645				
1968	438,128				
1969	498,992	**Totals, 1969**	**1,855**	**410**[1]	**498,992**

[1] Month-end average.

In addition to the monthly data published on the operation of the Unemploymen Insurance Act, annual tabulations are compiled regarding persons employed in insurabl employment and benefit periods established and terminated. These data are publishe in the annual report *Benefit Periods Established and Terminated under the Unemploymen Insurance Act* (Catalogue No. 73-201). Data on persons insured under the Act are obtaine from a 5-p.c. sample of insurance books and contribution cards renewed at June 1 eac year (10-p.c. sample prior to 1969). Included are persons engaged in insurable employmen as well as persons on claim at that date.

28.—Persons Insured under the Unemployment Insurance Act, by Province, 1965-69

(Sampling ratio 1965-68, 10 p.c.; 1969, 5 p.c.)

Province	1965	1966	1967	1968	1969p
	No.	No.	No.	No.	No.
Newfoundland	81,160	92,950	97,230	90,860	85,000
Prince Edward Island	15,520	15,270	16,280	15,780	27,000
Nova Scotia	147,070	151,180	159,170	161,040	170,000
New Brunswick	111,620	118,230	119,080	126,050	143,000
Quebec	1,235,510	1,278,040	1,326,300	1,314,940	1,539,000
Ontario	1,675,980	1,783,670	1,890,160	1,941,470	2,183,000
Manitoba	190,530	197,250	211,390	215,360	243,000
Saskatchewan	117,410	130,620	136,280	144,030	165,000
Alberta	251,780	262,330	286,120	296,740	384,000
British Columbia	429,970	457,840	492,760	505,770	561,000
Totals	**4,256,550**	**4,487,380**	**4,734,770**	**4,812,040**	**5,500,000**

Benefit.—The duration of regular benefit is related to the contribution history—one week's benefit for every two weeks' contributions in the past 104 weeks with a maximum of 52 weeks. However, contributions more than one year old cannot be used if they have already been taken into account in computing previous rights. Disqualifications for benefit include: loss of work owing to a labour dispute in which the contributor is participating or directly interested; unwillingness to accept suitable employment; being an inmate of any prison or any institution supported out of public funds; refusal to attend a course of instruction or training if directed to do so; residence outside Canada unless otherwise prescribed. Disqualification of a claimant for a period not exceeding six weeks

y be imposed if an employee is discharged by reason of his own misconduct or leaves ployment voluntarily without just cause or refuses suitable employment.*

Table **29** distributes regular benefit periods terminated by province and shows average ks and average dollar benefit paid on these terminations. A claimant establishes a *ular benefit period* when he submits his claim in the prescribed manner and proves he fulfilled the minimum contribution requirements. The duration of benefit and the kly rate authorized, comprising total entitlement, are then calculated and the claimant's efit may be drawn upon during successive intervals of unemployment. His benefit od terminates either when he has exhausted the amount authorized or when 52 weeks† e elapsed since he established, whichever comes first.

–Regular Benefit Periods Terminated, Duration and Average Amount of Benefit Paid, by Province, 1968 and 1969

NOTE.—In 1968, based on a 20-p.c. sample, except for Quebec and Ontario where a 10-p.c. sample was used; in 1969, sampling ratio was 10 p.c. and 5 p.c., respectively.

Province	1968			1969p		
	Benefit Periods Terminated	Average Weeks Paid on Termination	Average Amount Paid on Termination	Benefit Periods Terminated	Average Weeks Paid on Termination	Average Amount Paid on Termination
	No.	No.	$	No.	No.	$
foundland	27,255	15.1	423	26,410	15.3	490
ce Edward Island	4,845	15.5	387	4,420	15.2	417
a Scotia	37,415	12.9	330	36,150	13.3	385
Brunswick	35,820	14.0	374	31,080	14.4	423
bec	298,380	13.6	374	276,520	15.1	450
rio	320,580	12.4	331	287,420	12.6	374
itoba	32,860	13.4	350	33,310	13.9	402
katchewan	24,355	13.2	351	26,350	14.4	433
erta	41,785	11.6	312	41,890	12.0	363
ish Columbia	104,780	13.1	361	91,920	13.4	410
Totals	**928,075**	**13.1**	**353**	**855,470**	**13.8**	**411**

Table **30** gives regular benefit periods terminated and average weeks paid, classified age group of claimant.

* This list should not be considered exhaustive; more detail may be obtained from the Unemployment Insurance and Regulations.

† Under the Training Allowances Act, 1966, the benefit period of an insured person may be extended if he (or she) receipt of a training allowance. The benefit period is extended by the amount of time the person is undergoing ing but in no event can the benefit period extend beyond 156 weeks.

–Regular Benefit Periods Terminated and Duration of Benefit Paid, classified by Age Group of Claimant, 1968 and 1969

NOTE.—In 1968, based on a 20-p.c. sample, except for Quebec and Ontario where a 10-p.c. sample was used; in 1969, sampling ratio was 10 p.c. and 5 p.c., respectively.

Age Group	1968		1969p	
	Benefit Periods Terminated	Average Weeks Paid on Termination	Benefit Periods Terminated	Average Weeks Paid on Termination
	No.	No.	No.	No.
er 20 years	40,925	11.4	22,650	12.0
24 "	183,780	11.6	172,500	12.3
34 "	215,815	11.9	210,460	12.5
44 "	183,690	11.9	161,690	12.3
54 "	141,315	13.0	126,560	13.6
64 "	95,390	15.3	94,410	16.1
ears or over	43,680	25.8	46,360	26.5
pecified	23,480	13.1	20,840	14.2
Totals	**928,075**	**13.1**	**855,470**	**13.8**

Table 31 gives provincial distributions of seasonal benefit periods in 1968 and 19 average weeks and average benefit paid.

31.—Seasonal Benefit Periods, Duration of Benefit and Amount Paid, by Province, 1968 and 1969

NOTE.—In 1968, based on a 20-p.c. sample, except for Quebec and Ontario where a 10-p.c. sample was used; in 1 the sampling ratio was 10 p.c. and 5 p.c., respectively.

Province	1968			1969p		
	Benefit Periods	Average Weeks Paid	Average Amount Paid	Benefit Periods	Average Weeks Paid	Averag Amoun Paid
	No.	No.	$	No.	No.	$
Newfoundland	21,270	13.3	355	22,440	12.4	363
Prince Edward Island	6,280	10.1	261	5,390	12.7	380
Nova Scotia	19,010	10.9	281	18,020	10.6	322
New Brunswick	21,595	11.1	286	21,340	11.1	345
Quebec	81,740	9.5	249	86,720	9.5	293
Ontario	74,010	9.8	246	68,860	9.0	261
Manitoba	10,210	9.4	247	10,400	9.1	273
Saskatchewan	8,970	9.1	233	9,520	9.1	271
Alberta	10,295	8.4	220	10,260	8.1	250
British Columbia	32,260	10.0	270	29,080	9.5	316
Totals	**285,640**	**10.1**	**262**	**282,030**	**9.8**	**298**

Section 7.—Employment Injuries and Workmen's Compensation

Fatal Employment Injuries.—Data on fatal employment injuries, compiled h the Canada Department of Labour, are obtained from provincial Workmen's Compensati Boards, the Canadian Transport Commission, other government authorities and pre reports. Of the 1,057 fatal injuries to industrial workers that occurred during 1969, 2 were the result of a person being struck by an object, 250 were caused by collisions, dera ments or wrecks, and 208 by falls or slips. Inhalations, contact, absorptions, ingestio and industrial diseases accounted for 103 deaths and the act of getting caught in, on between objects, vehicles, etc., accounted for another 100. There were 48 deaths caus by contact with electric current, 46 by conflagrations, temperature extremes and explosion 17 by over-exertion and four by striking against or stepping on objects. The remainin 22 were the result of various miscellaneous accidents.

32.—Fatal Employment Injuries, by Industry, 1966-69

Industry	Numbers				Percentages of Total			
	1966	1967r	1968	1969p	1966	1967r	1968	1969
Agriculture	55	30	27	30	4.4	2.6	2.7	2.
Forestry	110	106	102	84	8.9	9.2	10.0	7.
Fishing and trapping	37	33	19	18	3.0	2.9	1.9	1.
Mining, quarrying and oil wells	144	182	132	151	11.6	15.7	13.0	14.
Manufacturing	220	186	175	192	17.7	16.1	17.2	18.
Construction	293	223	217	219	23.6	19.3	21.3	20.
Transportation, communication and other utilities	251	237	178	205	20.2	20.5	17.5	19.
Trade	59	64	58	51	4.7	5.5	5.7	4.
Finance, insurance and real estate	1	5	—	2	0.1	0.4	—	0.
Service	43	55	45	46	3.5	4.8	4.4	4.
Public administration	29	35	64	59	2.3	3.0	6.3	5.
Totals	**1,242**	**1,156**	**1,017**	**1,057**	**100.0**	**100.0**	**100.0**	**100.**

33.—Employment Injuries Reported and Compensation Paid by Workmen's Compensation Boards, 1968 and 1969

Year and Province	Employment Injuries Reported					Compensation Paid[2]
	Medical Aid Only[1]	Temporary Disability	Permanent Disability	Fatal	Total	
	No.	No.	No.	No.	No.	$
1968						
wfoundland	6,592	5,119	105	20	11,836	3,637,864
ce Edward Island	1,115	1,065	17	5	2,202	490,119
a Scotia	14,753	10,483	345	33	25,614	7,748,508
v Brunswick	14,752	8,247	257	33	23,289	4,761,215
bec	117,061	47,668	5,639	202	170,570	56,089,992[3]
ario	234,968	100,863	4,479	284	340,594	98,407,834[3]
itoba	16,142	12,822	444	39	29,447	..
katchewan	14,500	11,477	271	54	26,302	7,022,781
erta	32,538	23,020	1,007	108	56,673	16,351,691
ish Columbia	48,166	25,902	1,282	150	75,500	32,011,914
Totals, 1968	**500,587**	**246,666**	**13,846**	**928**	**762,027**	..
1969[p]						
wfoundland	4,821	4,477	46	33	9,377	3,117,821
ce Edward Island	1,048	1,001	8	1	2,058	518,678
a Scotia	13,449	10,444	76	45	24,014	8,366,696
v Brunswick	14,926	8,462	339	26	23,753	5,206,712
bec	119,643	52,543	5,899	193	178,278	59,784,023[3]
ario	229,391	126,713[4]	5,153[4]	275	361,532	115,083,981[3]
itoba	14,990	12,186	359	59	27,594	..
katchewan	13,674	11,324	239	35	25,272	8,417,794
erta	36,558	24,445	1,165	130	62,298	19,342,180
ish Columbia	51,143	30,352	1,320	168	82,983	43,716,887
Totals, 1969	**499,643**	**281,947**	**14,604**	**965**	**797,159**	..

[1] Injuries requiring medical treatment but not causing disability for a sufficient period to qualify for compen-n; the period varies in the several provinces. [2] Includes, except where noted otherwise, payments to pensate loss of earnings, medical aid payments, cost of rehabilitation and hospitalization (not including capital nditures) and pensions paid (not pensions awarded) for temporary and permanent disabilities; the Quebec com-ation figure includes pensions awarded as well as pensions paid. [3] Excludes payments by employers who e direct compensation to their employees; such employees come under Schedule II of the Ontario and Quebec kmen's Compensation Acts. [4] Estimated from a combined figure of 131,866 for temporary disability and nanent disability claims; these were the only figures available from the Ontario Workmen's Compensation Board.

Section 8.—Organized Labour

Subsection 1.—Union Membership

At Jan. 1, 1970, unions active in Canada reported a total membership of 2,173,000, nprising 33.6 p.c. of the non-agricultural paid workers in the country and 27.2 p.c. of the l civilian labour force. The increase in membership over 1969 was 4.7 p.c. and 36.7 over 1965.

Of the 1970 total, 1,632,000, or 75.1 p.c., were in organizations affiliated with the nadian Labour Congress (CLC) and, of these, 1,111,000 were in unions also affiliated h the American Federation of Labor (AFL) and the Congress of Industrial Organizations O) in the United States; another 207,000, or 9.5 p.c. were in affiliates of the Confedera-n of National Trade Unions (CNTU) and 15.3 p.c. were in various unaffiliated and in-endent national and international labour organizations.

Of the total union members in Canada, 62.5 p.c. belonged to international unions; ther 34.6 p.c. were members of national and regional unions which charter locals in nada only; and the remaining 2.9 p.c. belonged to independent local organizations and l unions chartered directly by the central labour congresses. In recent years there has

been an increase in the proportion which the membership of national and regional uni bears to the total and a corresponding decline in the proportion represented by inter tionals. This shift is attributable largely to the extension of collective bargaining rig in the public service sector and the concomitant inclusion of the membership of governm employee organizations in the totals for national and regional unions. In 1965, there w 52 national and regional unions reporting 390,000 members; by 1970, the correspondi figures were 64 and 752,000.

34.—Union Membership in Canada, 1942-70

Year	Members	Year	Members	Year	Members	Year	Membe
	'000		'000		'000		'000
1942	578	1949[1,2]	1,006	1957	1,386	1964	1,493
1943	665	1951[1]	1,029	1958	1,454	1965	1,589
1944	724	1952	1,146	1959	1,459	1966	1,736
1945	711	1953	1,220	1960	1,459	1967	1,921
1946	832	1954	1,268	1961	1,447	1968	2,010
1947	912	1955	1,268	1962	1,423	1969	2,075
1948	978	1956	1,352	1963	1,449	1970	2,173

[1] Figures for years up to and including 1949 are at Dec. 31; figures from 1951 are as at Jan. 1. [2] Newfou land included from 1949.

35.—Union Membership, by Type of Union and Affiliation, as at January 1970

Type and Affiliation	Unions	Locals	Membersh
	No.	No.	No.
International Unions	**102**	**4,888**	**1,359,34**
AFL-CIO/CLC	85	4,321	1,110,92
CLC only	6	254	143,78
AFL-CIO only	5	9	54
Unaffiliated Unions	6	304	104,09
National and Regional Unions	**64**	**4,437**	**752,37**
CLC	19	2,679	362,59
CNTU	12	1,003	207,08
Unaffiliated Unions	33	755	182,69
Directly Chartered Local Unions	**137**	**137**	**15,24**
CLC	133	133	14,95
CNTU	4	4	28
Independent Local Organizations	**131**	**131**	**46,14**
Grand Totals	**434**	**9,593**	**2,173,10**

Of the 166 international and national unions reporting membership in January 197 more than half, including 52 internationals and 30 national unions, had 5,000 or more mer bers; the combined membership of these amounted to almost 2,000,000. The Unit Steelworkers of America (AFL-CIO/CLC) remained the largest union, reporting a Canadi membership of 150,000. Two national unions, both affiliated with the CLC, were next size—the Canadian Union of Public Employees with 136,000 members (an increase 11,500 over January 1969) and the Public Service Alliance of Canada with 120,000 membe (an increase of 23,800 over the 1969 figure). A list of the unions reporting 30,000 or mo members at the beginning of 1970 follows.

Relative Position in 1970	Union and Affiliation	1970 Membership	Relative Position in 1969
1	United Steelworkers of America (AFL-CIO/CLC).....	150,000	1
2	Canadian Union of Public Employees (CLC).....	136,127	2
3	Public Service Alliance of Canada (CLC).....	119,743	4
4	International Union, United Automobile, Aerospace and Agricultural Implement Workers of America (CLC)....	109,274	3
5	United Brotherhood of Carpenters and Joiners of America (AFL-CIO/CLC).....	72,209	5
6	International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America (Ind.).....	58,178	6
7	International Brotherhood of Electrical Workers (AFL-CIO/CLC).....	56,918	7
8	International Association of Machinists and Aerospace Workers (AFL-CIO/CLC).....	53,003	8
9	Fédération Nationale des Services, Inc. (CSN) Service Employees' Federation (CNTU).....	49,362	10
10	International Woodworkers of America (AFL-CIO/CLC)	48,904	9
11	International Brotherhood of Pulp, Sulphite and Paper Mill Workers (AFL-CIO/CLC).....	40,984	12
12	Canadian Food and Allied Workers (AFL-CIO/CLC)...	40,000	11
13	Canadian Brotherhood of Railway, Transport, and General Workers (CLC).....	33,330	14
14	Labourers' International Union of North America (AFL-CIO/CLC).....	32,941	13
15	Fédération des Travailleurs de la Métallurgie, des Mines, et des Produits Chimiques (CSN) Canadian Federation of Steel, Mine and Chemical Workers (CNTU).....	32,528	16
16	Service Employees International Union (AFL-CIO/CLC)	31,232	[1]
17	United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States and Canada (AFL-CIO/CLC).....	30,737	17
18	Syndicat des Fonctionnaires Provinciaux du Québec (CSN) Québec Government Employees (CNTU).....	30,000	18
19	Civil Service Association of Ontario (Ind.).....	30,000	[2]

[1] Fewer than 30,000 members in 1969. [2] Not included prior to 1970.

Further details on the labour movement in Canada, including lists of individual ns, their membership, principal officers and the geographic distribution of their locals rried in *Labour Organizations in Canada*, an annual publication of the Canada Depart- of Labour; it is available from Information Canada, Ottawa.

Subsection 2.—Wage Developments under Major Collective Agreements, 1969

The Canada Department of Labour obtains data on wage settlements under collective ments on a quarterly basis. The agreements covered are limited to negotiating units 0 employees or more in all industries, with the exception of construction. The base- for a negotiating unit is defined as a straight-time hourly wage rate for the lowest paid fied workers, usually unskilled or semi-skilled workers, although some contracts n only skilled workmen. Thus, the wage data are not necessarily representative of verage increases enjoyed by the workers in the negotiating unit as a whole. On the hand, the data on numbers of agreements and workers refer to all occupational s in the negotiating units.

Wage-rate data given in Tables **36** and **37** indicate that on Dec. 31, 1969, approximately ,000 workers were covered by 661 major collective agreements in negotiating units 500 or more workers in industries other than construction. The average base-rate 6.9 cents, or 7.1 p.c., during the 12-month period ended Dec. 31, 1969, compared with crease of 14.9 cents or 6.6 p.c. during the preceding 12-month period. During 1969,

the consumer price index rose 4.6 p.c. and during 1968 it rose 4.1 p.c., so that, deflating wage increases by the consumer price index increase, the average hourly base-rate increa in real terms by 2.4 p.c. during 1969 and by 2.4 p.c. during 1968.

36.—Employees Covered by All Collective Bargaining Agreements in Negotiating Ur Covering 500 or more Employees in Industries other than Construction, in Ef December 1969.[1]

Region or Province	Manufacturing Industries			Non-manufacturing Industries except Construction	All Industr excep Con- structi
	Durable Goods	Non-durable Goods	Total Manufacturing		
	No.	No.	No.	No.	No.
Atlantic	6,990	9,925	16,915	38,745	55,6
Newfoundland	—	*4,400*	*4,400*	*9,400*	*13,8*
Prince Edward Island	—	—	—	—	—
Nova Scotia	*5,925*	*3,140*	*9,065*	*10,940*	*20,0*
New Brunswick	*1,065*	*2,385*	*3,450*	*18,405*	*21,8*
Quebec	54,725	76,895	131,620	259,415	391,0
Ontario	127,570	64,030	191,600	163,260	354,8
Prairies	3,620	3,350	6,970	93,305	100,2
Manitoba	*2,460*	*1,800*	*4,260*	*27,145*	*31,4*
Saskatchewan	—	—	—	*19,340*	*19,3*
Alberta	*1,160*	*1,550*	*2,710*	*46,820*	*49,5*
British Columbia	40,475	16,800	57,275	56,020	113,2
Multi-provincial[2]	31,960	22,540	54,500	361,355	415,8
Canada	**265,340**	**193,540**	**458,880**	**972,100**	**1,430,9**

[1] Refer to all agreements in force, irrespective of the year of settlement. As of Dec. 31, 1969, this univ included 661 agreements covering 1,430,980 employees. [2] Covers agreements pertaining to workers locate more than one province.

Additional data are available from the Canada Department of Labour on wage set ments under agreements newly settled during quarterly periods, including number of agr ments settled, number of employees affected and duration of contracts. The agreeme covered are again limited to negotiating units of 500 employees or more in all industr except construction. Details are not given here but, for 1969 as a whole, 341 contra were settled. These 341 settlements affected the wage-rates of about 780,000 work On the average, the 341 settlements provided an annual percentage increase in the straig time hourly base-rate equal to 8.0 p.c. over the lives of the contracts; this percentage v the same as the comparable percentage for the year 1968.

Settlements during the year 1969 of one-year duration provided for increases averag 8.0 p.c.; those of two-year duration for increases of 8.4 p.c. and 5.9 p.c. for the first and sec years, respectively; and those of three-year duration of 10.8 p.c., 6.5 p.c. and 5.3 p.c. the first, second and third years of the contract. These increases compare with those 1968 as follows: one-year agreements, average increases of 7.3 p.c.; two-year agreemer average increases of 8.4 p.c. and 6.2 p.c.; and three-year agreements provided for aver increases of 12.0 p.c., 6.7 p.c. and 5.1 p.c. for the first, second and third years of the contra

37.—Annual Percentage and Cents-Per-Hour Increases in Base-Rates under Major Collective Agreements, by Month, 1969

NOTE.—Based on all major collective agreements covering 500 or more employees in force except those in the truction industry. Data refer to rates actually paid in the month specified; no adjustments have been made etroactive wage increases.

Month	Manufacturing					
	Durable Goods		Non-durable Goods		Total Manufacturing	
	Year-Over-Year Increase		Year-Over-Year Increase		Year-Over-Year Increase	
	p.c.	cents	p.c.	cents	p.c.	cents
ary	8.2	20.1	7.0	15.4	7.8	18.1
ruary	8.3	20.4	6.9	15.4	7.8	18.3
ch	8.0	19.8	6.9	15.4	7.7	18.0
l	6.6	16.6	6.6	14.8	6.7	15.8
	6.4	16.2	7.5	16.9	6.9	16.5
	7.3	18.7	8.0	18.0	7.7	18.4
	6.1	15.8	8.8	20.0	7.3	17.6
ust	5.4	14.0	8.5	19.4	6.7	16.3
ember	5.5	14.3	7.3	16.9	6.3	15.4
ber	6.3	16.6	7.4	17.2	6.8	16.8
ember	7.4	19.4	7.4	17.3	7.5	18.5
ember	7.5	19.7	7.1	16.6	7.4	18.5

Month	Commercial Industries except Construction		Non-commercial Industries[1]		All Industries except Construction	
	Year-Over-Year Increase		Year-Over-Year Increase		Year-Over-Year Increase	
	p.c.	cents	p.c.	cents	p.c.	cents
ary	9.8	22.1	7.9	16.8	7.4	16.8
ruary	7.5	17.2	7.3	15.7	7.3	16.6
ch	7.7	17.5	6.9	14.8	7.3	16.5
l	7.4	17.0	6.8	14.8	6.9	15.9
	7.5	17.4	6.9	15.1	7.0	16.2
	8.0	18.6	6.6	14.4	7.3	16.8
	7.6	17.8	6.1	13.4	6.9	16.1
ust	7.4	17.6	5.8	12.9	6.6	15.6
ember	7.0	16.6	5.7	12.8	6.3	15.0
ber	7.0	16.8	6.8	15.4	6.7	16.0
ember	7.8	18.6	6.3	14.3	7.3	17.3
ember	7.6	18.3	6.3	14.4	7.1	16.9

[1] This category consists of public administration and defence; education and related institutions; hospitals; are organizations; religious organizations; private households; miscellaneous services; highway and bridge ntenance; water system and other utilities.

Section 9.—Strikes and Lockouts

Statistical information on strikes and lockouts in Canada is compiled by the Economics l Research Branch of the Canada Department of Labour on the basis of reports from nada Manpower Centres of the Department of Manpower and Immigration. Table 38 ers strikes and lockouts lasting 10 or more man-days. The developments leading to rk stoppages are often too complex to make it practicable to distinguish statistically ween strikes on the one hand and lockouts on the other. However, a work stoppage t is clearly a lockout is not often encountered.

The number of workers involved includes all workers reported on strike or locked out, ether or not they all belonged to the unions directly involved in the disputes leading to rk stoppages. Workers indirectly affected, such as those laid off as a result of a work ppage, are not included. Duration of strikes and lockouts in terms of man-days is culated by multiplying the number of workers involved in each work stoppage by the nber of working days the stoppage was in progress. The data on duration of work stop-es in man-days are provided to facilitate comparison of work stoppages in terms of a mon denominator. They are not intended as a measure of the loss of productive time the economy.

38.—Strikes and Lockouts, by Industry, 1969 with Totals for 1965-69

Industry	Strikes and Lockouts Beginning During Year	Strikes and Lockouts in Existence During Year		
		Strikes and Lockouts	Workers Involved	Duration Man-Day
	No.	No.	No.	No.
Agriculture	—	—	—	—
Forestry	**11**	**12**	**2,798**	**9,1**
Fishing and Trapping	—	—	—	—
Mines	**26**	**27**	**31,511**	**2,088,9**
Metal	14	14	26,069	2,021,7
Mineral fuels	3	3	2,160	8,0
Non-metal	6	6	3,023	42,3
Quarries	3	4	259	16,8
Incidental services	—	—	—	—
Manufacturing	**268**	**284**	**88,303**	**2,958,6**
Food and beverages	35	38	6,863	128,6
Tobacco products	—	—	—	—
Rubber	5	8	1,260	72,0
Leather	5	5	329	4,1
Textiles	15	15	7,620	63,8
Knitting mills	1	1	56	10,3
Clothing	1	1	19	1
Wood	19	20	3,953	59,9
Furniture and fixtures	4	4	654	15,5
Paper	19	20	5,920	234,0
Printing and publishing	10	11	878	17,9
Primary metals	23	23	14,087	774,8
Metal fabricating	29	30	16,445	885,5
Machinery	11	11	2,432	73,2
Transportation equipment	35	36	15,791	146,0
Electrical products	18	20	5,873	123,7
Non-metallic mineral products	19	20	2,729	75,3
Petroleum and coal products	1	1	700	68,7
Chemical products	10	10	1,512	49,2
Miscellaneous manufacturing	8	10	1,182	155,4
Construction	**115**	**118**	**79,748**	**1,994,0**
Transportation and Utilities	**45**	**46**	**30,312**	**568,8**
Transportation	29	30	14,753	308,9
Storage	1	1	35	3
Communication	6	6	9,193	202,1
Power, gas and water	9	9	6,331	57,4
Trade	**41**	**44**	**7,052**	**274,9**
Finance	—	—	—	—
Financial institutions	—	—	—	—
Insurance and real estate	—	—	—	—
Service	**49**	**51**	**58,147**	**143,6**
Education	26	26	56,391	114,7
Health and welfare	5	6	544	15,3
Religious organizations	—	—	—	—
Recreational services	—	1	3	7
Services to business	2	2	113	1,0
Personal services	12	12	690	9,0
Miscellaneous services	4	4	406	2,6
Public Administration	**11**	**13**	**8,928**	**18,7**
Federal administration	—	—	—	—
Provincial administration	—	—	—	—
Local administration	11	13	8,928	18,7
Other government offices	—	—	—	—
Totals 1969	**566**	**595**	**306,799**	**8,057,0**
1968	**559**	**582**	**223,562**	**5,082,7**
1967	**498**	**522**	**252,018**	**3,974,7**
1966	**582**	**617**	**411,459**	**5,178,1**
1965	**478**	**501**	**171,870**	**2,349,8**

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

The important role played by transportation in the history and economic development Canada has been told often and well. The history of Canadian transportation may be vided into three distinct stages—the early or development stage lasting up to about 1920, e monopolistic stage from 1920 to about 1950, and the competitive stage beginning in e early 1950s.

The early settlers of Canada depended almost exclusively on transport by water. ng before Confederation, public works such as canals and docks were built by local vernments for the purposes of defence and internal economic development. However, the movement of goods and people became heavier, waterways and canals were found be inadequate as transportation routes and the railway came into use. The first was ened in 1836 but the real railway boom began in the 1850s, and their construction or omised construction formed part of the Confederation scheme of 1867. The promised nstruction of the Intercolonial Railway from Central Canada to the Maritimes was ritten into the British North America Act of 1867. Similarly, one of the conditions under hich British Columbia joined Confederation in 1871 was that the Dominion Government ndertake the construction of a railway connecting it with the rest of the country and in 74 work started on the construction of a transcontinental line. The successful completion the Canadian Pacific Railway in 1885 marks the end of this part of Canadian railway his- ry. By 1905, Canada was committed to the building of two additional transcontinental il lines—the Canadian Northern and the Grand Trunk Pacific. The expectation that ese railways would operate profitably proved ill-founded as both (as well as the Grand runk Railway Company) collapsed as privately owned enterprises. A Royal Commission

in 1917 recommended that all three railways be consolidated with other government-owne railways; this proposal was accepted and the present Canadian National Railway Syste was founded. In the late eighteenth century Canada was one of the largest ship-owni nations in the world. However, by 1900, because of stiff foreign competition and the adve of iron and steel ships, Canadian ocean shipping tonnage had decreased by nearly hal

The second period of Canadian transportation history, 1920-50, was characterized b the rapid development of different, competing modes of transport. The motor vehic emerged as one of the dominant features and not only revolutionized the transportatio industry but became indispensable to modern living; registrations increased nearly tenfol from 280,000 in 1920 to 2,400,000 in 1949. Air service for the conveyance of passenger mail and freight started in 1924 and later in the 1920s flying services were in operatio between major urban centres. In 1937 the Canadian Government established Tran Canada Air Lines (now Air Canada) as a national airline which, by the end of that decad operated regular passenger services between the largest cities of the country. Equall important in the field of civil aviation was the amalgamation of a number of independe airlines to form Canadian Pacific Airlines. At the same time during this period, Canadia international sea-borne shipping in Canadian vessels had been declining due partly to th depression and partly to competition from other nations. High wages, depreciation an heavy interest charges also had a depressing effect on Canadian shipping.

In the late 1920s, the Canadian Government attempted to rehabilitate and unify th various individual and often competing railway companies. Despite all these efforts th financial position of the railways deteriorated during the depression years and did n improve until the outbreak of World War II. During the war, railways assumed the mai burden of carrying food, ammunition and troops. Railway passenger traffic reached it peak in 1944 when 60,000,000 passengers were carried and then began to decline with th increasing use of the automobile and bus for short or medium distances and of air carrie for medium and long distances.

Since the end of the Second World War, the transportation field has become highl competitive. The growth of highway transport has been one of the most important devel opments. Its amazing growth may be traced directly to the great technical advances tha have been made in the design and operating efficiency of motor vehicles and also to th development of secondary manufacturing industries, the decentralization of industry an the growth of metropolitan areas. Long-distance highway transport became importan in the early 1950s and the construction of the Trans-Canada Highway in the followin years gave a further direct impetus to the growth of the industry.

The St. Lawrence Seaway, opened 1959, has been of great economic benefit to Canad by permitting the low-cost movement of such bulk commodities as wheat, iron ore and coa There has been some speculation that the Seaway might soon become obsolete due t technological progress currently taking place in transportation. There would seem to b little doubt that changes such as container ships, giant tankers, unit trains, etc., will certainl influence the future pattern of Seaway traffic.

Pipelines came rapidly into the picture following the discovery of vast petroleum an gas reserves in Western Canada in the late 1940s. By 1950, there were 1,400 miles of trunk pipeline in operation in Canada and just six years later the total was 5,807 miles. Thi mileage has grown into a vast network which is making possible the economical exploitatio of Canada's tremendous resources of oil and gas. In the early 1950s resource development and the building of defence projects in the Canadian North gave a great impetus to the growth of air freight but, more recently, the advance has been mainly in the area of inter city operations.

The airlines' share of intercity passenger-mile traffic carried by public conveyances e to 37 p.c. by 1968, a growth attributable to the demand for fast service and to the volutionary technological developments that have occurred in this industry, mainly the velopment of the turbo prop and jet engines which permitted the use of larger and more cient aircraft. During this period, Canada's two major airlines—Air Canada and nadian Pacific (CP Air)—became world carriers, Air Canada ranking among the largest.

Automobiles now account for more than four fifths of all intercity passenger travel d this, together with the growth of travel by air, has had an adverse effect on intercity travel which has declined more than 50 p.c. since 1950. The railways, too, have lost ffic in the past 20 years, especially passenger traffic, for the same reason. Nevertheless, portant advances have been made in the rail transport field, the most outstanding being, haps, their complete conversion to diesel power. Complex programs of plant and equip-nt modernization were undertaken and centralized traffic control devices, electrically ntrolled classification yards, piggybacks and unit trains were developed to fight the mpetition as well as to supply better service. It should be noted also that the railways repeating in the Canadian North the essential services they performed in the early tory of Canada when great isolated areas were being opened up to industry and develop-nt.

Thus, the Canadian transportation environment has changed fundamentally in the st 20 years and will keep changing as each mode of movement, in competition with the ers, continues to take advantage of technological developments in its own area and ntinues to adapt to changing economic requirements.

PART I.—RAIL TRANSPORT*

The Canadian railway scene is dominated by two giant transcontinental systems, plemented by a number of regional railways. The two largest railway companies ntrol a wide variety of Canadian and international transport and communications services. e government-owned Canadian National Railway System is the country's largest public lity and operates the greatest length of trackage in Canada. It serves all ten provinces well as the Great Slave Lake area of the Northwest Territories. In addition, it operates ighway transport service, a fleet of coastal steamships, a chain of large hotels and resorts, d a scheduled Canadian and international air service (see p. 939). The Canadian Pacific ilway Company is a joint-stock corporation operating a railway service in eight provinces. is also a multi-transport organization, operating, in addition to its railways, a domestic ck network, a fleet of inland, coastal and ocean-going vessels, a chain of year-round and ort hotels and a domestic and foreign airline service (see p. 941). The Pacific Great stern Railway, owned by the British Columbia Government, operates over an 800-mile te from North Vancouver to Fort St. John in the Peace River area of northeastern itish Columbia, and is currently being extended farther north toward Fort Nelson. The rthern Alberta Railway, jointly owned by CP and CN, serves the area north of Edmonton h a 900-mile system. Northern Ontario is served by the provincially owned Ontario rthland Railways with a 600-mile system stretching from North Bay to Moosonee, and the privately owned Algoma Central Railway operating over 300 miles of line between ult Ste Marie and Hearst.

Of the total railway revenue recorded in Canada in 1969, Canadian National contributed 2 p.c. and Canadian Pacific 36.7 p.c. The Quebec, North Shore and Labrador Railway,

* The statistical data in this Part were revised in the Transportation and Public Utilities Division, Dominion reau of Statistics; more detailed information is given in the annual reports of the Division.

built primarily to transport ore and concentrates from the iron mines of the Scheffervill and Wabush areas of Labrador and Quebec to water transportation facilities on the S Lawrence River, accounted for 2.4 p.c. of the revenues. Other railways contributing 1 p.c or more to the total revenue figure were the Pacific Great Eastern 1.8 p.c., the Ontari Northland 1.1 p.c. and the Chesapeake and Ohio 1.0 p.c.

Even though the railways have in recent years faced strong competition from highwa and air transport for the movement of people and much of the commodity trade, they ar still indispensible for carrying bulk commodities and thus are necessary to the developmen of natural resources located in isolated areas of this great country. Only the pipelines hav competed with the railways in this respect by providing an economical means of transportin the products of the oil and gas fields for long distances overland, and it is altogether probabl that pipelines for transporting solids will, before long, constitute additional competitior (It is interesting to note that Canadian Pacific is in the forefront of research in this field. The rapid growth of containerization in recent years has made the integration of the serv ices of railway, highway, shipping and other modes of transport of growing importance However, the two major railways of Canada, with their multi-transport interests, are in a excellent position to face this and other trends appearing in the transportation industry Canadian railways have evolved over the past 100 years from a position of virtual monopol in the movement of goods and people by rail, through a highly competitive stage to th present system of co-operation and co-ordination with other modes of transport. Th latter approach permits each mode of transport to concentrate on the particular functio it can perform most efficiently, thus establishing the most effective and economical syste of transportation services possible.

Government Aid to Railways.—In order that the private railways of Canada migh be constructed in advance of settlement as colonization roads or through sparsely settle districts where little traffic was available, it was necessary for federal and provincial govern ments and even for municipalities to extend some form of assistance. The form of ai was usually a bonus of a fixed amount for each mile of railway constructed and, in th early days, grants of land were also made other than for right-of-way. As the countr developed, objections to the land-grant method became increasingly apparent and ai was given more frequently in the form of a cash subsidy for each mile of line, a loan or subscription to the shares of the railway. Guarantees of debenture issues came later and since the formation of the Canadian National Railways, all debenture issues of that System except those for rolling-stock, have been guaranteed by the Federal Government. Durin the era of railway expansion before 1918, provincial governments guaranteed the bond of some railway lines that afterwards were incorporated in the Canadian National Railwa System. These bonds as they mature or are called are paid off by the Canadian Nationa Railways, in large measure through funds raised by the issue of new bonds with Federa Government guarantee. Railway bonds guaranteed by the Government of Canada a Dec. 31, 1970 amounted to $1,042,019,500.

As discussed on pp. 959-961, the National Transportation Act (SC 1967, c. 69), ad ministered by the Canadian Transport Commission, expresses a national transportatio policy for Canada aimed at the development of "an economic, efficient and adequat transportation system making the best use of all available modes of transportation at th lowest total cost". This law is intended to provide the railways with greater freedon to meet the competition with which they are faced and to develop as an integral part o today's complex transportation system.

Under the Act, the 1966 level of Federal Government rail subsidy of $110,000,00 a year will decline by $14,000,000 a year until it disappears at the end of 1974. The Crows nest Pass rates on grain and flour from Western Canada and the rates under the Maritim Freight Rates Act remain in force. The so-called "bridge subsidy" paid under the Rail way Act to the major railways for operation of lines through the light-traffic territory i the Lake Superior District ceased at the end of 1966 but the reduction in freight rate

e possible by the bridge subsidy remains in force. However, commencing on Mar. 23, , the railways were permitted to make successive annual increases for a period of three s to the freight rates over the territory formerly covered by the bridge subsidy, to l additional operating revenues in the first year of $3,000,000, in the second year of 00,000, and in the third year of $2,000,000.

Track Mileage.—The first railway to be built in Canada—the Champlain and St. rence Railroad between Laprairie and St. Johns (St. Jean), Que.—was officially opened ervice on July 21, 1836. However, the first great period of railway construction did take place until the 1850s when the Grand Trunk and the Great Western Railways built as well as numerous smaller lines. The building of the Intercolonial and the adian Pacific Railways contributed to another period of rapid expansion in the 1870s 1880s and, in the last period of extensive railway building (1900-17), the Grand Trunk fic, National Transcontinental and Canadian Northern Railways were constructed. e change has occurred in the total track mileage in Canada since the 1920s. There been some recent construction, including the CN-operated 230-mile Alberta Resources way west of Edmonton and the extension of British Columbia's Pacific Great Eastern way to Fort St. John, with construction continuing northward, but new construction been largely offset by the abandonment of unprofitable lines.

1.—Railway Track Mileage Operated, 1900-69

T Main Track Mileage[1]		Track Mileage by Area and Type					
Year	Miles in Operation	Area and Type of Track	1965	1966	1967	1968	1969
	No.		No.	No.	No.	No.	No.
		First Main—					
.....	17,657	Newfoundland.....	936	936	936	936	943
.....	20,487	Prince Edward Island.....	279	279	252	254	254
.....	24,731	Nova Scotia	1,314	1,313	1,313	1,301	1,301
.....	34,882	New Brunswick.....	1,730	1,671	1,667	1,665	1,665
.....	38,805	Quebec.....	5,238	5,138	5,327[2]	5,328	5,329
.....	40,350	Ontario.....	9,950	9,965	9,979	10,045	10,045
.....	42,047	Manitoba.....	4,735	4,735	4,735	4,746	4,746
.....	42,916	Saskatchewan.....	8,522	8,567	8,567	8,565	8,565
.....	42,565	Alberta.....	5,723	5,680	5,680	5,650	5,950
.....	42,352	British Columbia.....	4,333	4,322	4,315	4,281	4,289
.....	42,979	Yukon Territory.....	58	58	58	58	58
.....	43,444	Northwest Territories.....	—	—	—	—	129
.....	44,029	United States.....	339	339	339	339	339
.....	43,689						
.....	43,654	Totals, First Main.....	43,157	43,003	43,168	43,168	43,613
.....	43,623						
.....	43,355	Second main.....	2,004	1,999	1,990	1,984	1,956
.....	43,157	Other main.....	56	57	65	65	65
.....	43,003	Industrial.....	1,309	1,313	1,379	1,466	1,462
.....	43,168	Yard and sidings.....	11,676	11,728	11,928	11,975	12,019
.....	43,168						
.....	43,613	**Grand Totals**[4].....	**58,202**	**58,100**	**58,530**	**58,658**	**59,115**

Defined as a single track extending the entire distance between terminals, upon which the length of the road is . [2] Includes 190 miles of track of the Cartier Railway which began operations in 1963 but was not in- l in the statistics until 1967. [3] Newfoundland included from 1950. [4] Excludes joint track amount- 55 miles in 1965, 74 miles in 1966, 143 miles in 1967, 140 miles in 1968 and 141 miles in 1969.

Rolling-Stock.—Table 2 shows the numbers of the various types of freight and pas- er equipment in operation in 1960, 1968 and 1969 revealing a generally downward l prior to 1969; however, these figures do not reflect the offsetting trend toward larger, efficient cars and locomotives or the steady improvement in speed of movement itated by modernized handling and terminal services. Each year hundreds of units, icularly freight cars, are converted and modified to make them suitable for specific s of traffic or are replaced by special-purpose equipment designed for distinctive hauling

jobs. The average capacity of all freight cars was 56.8 tons in 1969 compared with 5 tons in 1960. Also, although the number of diesel-electric locomotives in service remained fairly static over this period, it should be noted that an extensive program power upgrading has been followed by the railway companies. The combined tract power (the force exerted by powered equipment measured at the rim of the driving whe of all locomotives in 1969 averaged 61,811 lb. as compared with 55,793 lb. in 1960.

2.—Railway Rolling-Stock in Operation as at Dec. 31, 1960, 1968 and 1969

Type	1960	1968	1969	Type	1960	1968	196
	No.	No.	No.		No.	No.	No
Locomotives	**3,752**	**3,294**	**3,316**	**Freight Cars**	**191,553**	**188,254**	**188,**
Steam—				Automobile	7,249	3,646	3,
Coal-burning	335	—	—	Ballast	3,128	2,863	2,
Oil-burning	68	—	—	Box	111,217	103,903	101,
Diesel-electric	3,308	3,275	3,297	Flat	12,645	16,002	17,
Electric	41	19	19	Gondola	20,310	20,438	20,
				Hopper	15,578	21,660	22,
Passenger Cars	**5,119**	**2,999**	**2,942**	Ore	5,930	6,722	6,
Coach	1,342	811	793	Refrigerator	10,076	8,074	7,
Combination	172	87	81	Stock	4,917	2,987	2,
Colonist	88	32	32	Tank	472	538	
Dining	149	137	130	Other	31	1,421	1,
Parlour	137	129	134				
Sleeping	861	530	520				
Baggage, express and postal	2,218	1,125	1,105	**Privately Owned Cars**[1]	**5,031**	**15,823**	**16,**
Self-propelled	111	115	115	Tank	4,999	14,994	15,
Other	41	33	32	Other	32	829	

[1] Includes those of non-rail industrial firms such as oil, chemical and railway car leasing companies which fur freight cars to, or on behalf of, any railway line.

Traffic, Employment and Finance Statistics.—Statistics presented under t heading are for the Canadian National Railways, the Canadian Pacific Railway Comp and 22 other common carrier lines whose gross revenues are $500,000 or more annua Excluded are the British Columbia Hydro and Power Authority Railway line and Cartier Railway, and lines with annual revenues of less than $500,000 annually, wh operations account for about 1 p.c. of the total.

Table 3 gives traffic and employment statistics for the above railways for the ye 1965-69 and Table 4 gives similar data for the Canadian National and Canadian Pac railways separately for 1968 and 1969.

3.—Statistics of Total Railway Traffic and Employment, 1965-69

(Excludes data *re* the British Columbia Hydro and Power Authority Railway and the Cartier Railway in Quebec)

Item		1965	1966	1967 r	1968	1969
Miles of road operated (monthly av.)	No.	43,960.04	43,953.16	43,917.31	44,029.91	44,131.
Freight—						
Tons carried, revenue[1]	tons	225,356,167	237,718,214	237,121,248	242,653,709	231,217,
Ton-miles, revenue	'000	87,052,200	94,944,223	92,239,045	93,146,935	94,690,
Ton-miles, revenue and non-revenue	"	88,924,992	96,805,689	94,229,101	95,354,432	97,120,
Passengers—						
Revenue passengers[2]	No.	23,610,374	23,194,018	26,853,288	24,603,634	23,699,
Revenue passenger-miles	"	2,664,380	2,587,435	3,170,889	2,626,345	2,417,
Gross Ton-Miles—						
Freight train	'000	183,692,922	195,421,157	190,337,589	191,238,754	194,679,
Passenger train	"	20,147,373	19,380,589	20,957,337	16,859,619	14,918,
Totals, Ton-Miles	'000	**203,840,295**	**214,801,746**	**211,294,926**	**208,098,373**	**209,597,**

[1] Tonnage shown is sum of tonnages carried by individual railways; thus traffic handled by more than one rail (interline) is included more than once. [2] Footnote [1] applies also to number of revenue passengers.

3.—Statistics of Total Railway Traffic and Employment, 1965-69—concluded

Item		1965	1966	1967r	1968	1969
-Miles—						
ight service	No.	67,803,428	68,303,326	64,774,033	59,764,547	60,295,348
ssenger service	"	29,463,880	27,625,417	30,072,080	28,366,110	27,170,887
rk service	"	1,864,877	1,921,822	1,963,041	1,851,476	2,639,940
Totals, Train-Miles	**No.**	**99,132,185**	**97,850,565**	**96,809,154**	**89,982,133**	**90,106,175**
Miles—						
ight	'000	3,819,398	4,003,515	3,840,876	3,791,003	3,857,746
ssenger	"	306,536	276,070	303,473	246,094	217,016
Totals, Car-Miles	**'000**	**4,125,934**	**4,279,585**	**4,144,349**	**4,037,097**	**4,074,762**
vay employees	No.	133,812	130,790	130,712	120,627	118,504
vay payroll	$ '000	735,442	762,762	836,994	835,868	881,855
oll chargeable to railway operating enses	"	675,750	698,318	764,081	755,584	797,384

Statistics of Railway Traffic and Employment for the Canadian National Railways, the Canadian Pacific Railways and 24 Major Carriers, 1968 and 1969

Item		Canadian National Railways		Canadian Pacific Railways		Totals, 24 Railways	
		1968	1969	1968	1969	1968	1969
of road operated monthly av.)	No.	22,814.20	22,903.50	16,652.00	16,597.70	44,029.91	44,131.17
ht—							
ns carried—revenue[1]	tons	90,915,852	91,560,632	67,993,409	67,240,263	242,653,709	231,217,882
n-miles—revenue	'000	45,427,223	47,459,616	34,582,187	36,176,496	93,146,935	94,690,391
n-miles—revenue and on-revenue	"	46,739,967	49,117,063	35,356,347	36,905,797	95,354,432	97,120,326
ngers—							
venue passengers[2]	No.	13,925,125	13,094,014	5,287,885	5,076,242	24,603,634	23,699,748
venue passenger-miles	'000	1,980,723	1,773,743	494,212	484,864	2,626,345	2,417,586
s Ton-Miles—							
ight train	'000	95,221,941	99,753,476	72,055,958	74,482,572	191,238,754	194,679,873
ssenger train	"	13,227,528	11,512,653	2,897,224	2,778,588	16,859,619	14,918,067
Totals, Ton-Miles	**'000**	**108,449,469**	**111,266,129**	**74,953,182**	**77,261,160**	**208,098,373**	**209,597,940**
-Miles—							
ight service	No.	30,309,765	31,130,085	22,956,110	23,112,391	59,764,547	60,295,348
ssenger service	"	20,234,659	19,272,066	5,821,965	5,679,807	28,366,110	27,170,887
rk service	"	1,302,908	2,112,035	270,317	271,406	1,851,476	2,639,940
Totals, Train-Miles	**No.**	**51,847,332**	**52,514,186**	**29,048,392**	**29,063,604**	**89,982,133**	**90,106,175**
Miles—							
ight	'000	1,942,620	2,024,820	1,446,227	1,475,905	3,791,003	3,857,746
ssenger	"	187,669	162,384	43,679	42,391	246,094	217,016
Totals, Car-Miles	**'000**	**2,130,289**	**2,187,204**	**1,489,906**	**1,518,296**	**4,037,097**	**4,074,762**
vay employees	No.	68,833	68,290	42,235	40,887	120,627	118,504
vay payroll	$ '000	480,462	511,060	287,074	298,729	835,868	881,855
oll chargeable to railway operating expenses	"	429,451	456,627	262,453	272,936	755,584	797,384

Total tonnage for 24 railways is sum of tonnages carried by individual railways; thus traffic handled by more one railway (interline) is included more than once. [2] Footnote [1] applies also to number of revenue passrs.

The total tonnage of freight carried by all common carrier railways (including national ings and receipts from United States connections) increased steadily for a number ears until 1969 when a 4.2-p.c. decline was experienced. In that year, mine products unted for 41.4 p.c. of the total freight handled and the minerals carried in largest me were iron ore, other ores and concentrates and bituminous coal.

Of the total of 207,595,448 tons of freight carried (excluding freight handled by more th one railway and in intermediate switching), manufactured products accounted for 35.2 p agricultural products for 11.8 p.c., forest products for 11.0 p.c., animal products for 0.5 p and less-than-carload lots for 0.1 p.c.

5.—Commodities Hauled as Freight by Railways, 1965-69

NOTE.—In this table duplications are eliminated, i.e., the same freight handled by two or more railway counted only once. The statistics do not include the United States lines of the Canadian National Railways, but link of the Canadian Pacific Railway line across Maine, U.S.A., is included, as are the Canadian sections of Un States railways. Freight carried by the Cartier Railway is included from 1967 on.

Commodity	1965	1966	1967	1968	1969
	tons	tons	tons	tons	tons
Agricultural Products	**30,369,784**	**35,165,635**	**29,426,151**	**24,219,775**	**24,449,**
Wheat	17,173,187	21,893,103	16,025,009	12,950,506	12,012,
Corn	1,090,003	1,006,127	826,623	860,134	797,
Oats	1,344,012	1,110,485	1,113,648	697,560	717,
Barley	2,253,706	2,242,250	3,083,696	2,026,539	2,772,
Other grain	338,361	469,772	433,125	318,567	289,
Flour, wheat	1,528,737	1,476,035	1,214,107	1,131,483	1,072,
Other mill products	1,819,690	1,748,540	1,738,258	1,613,231	1,629,
Potatoes, other than sweet	878,713	740,331	752,355	748,027	781,
Sugar beets	509,311	492,309	463,119	567,307	594,
Flaxseed	502,697	770,207	561,951	250,569	667,
Other agricultural products	2,931,367	3,216,476	3,214,260	3,055,852	3,115,
Animal Products	**1,466,380**	**1,361,228**	**1,378,486**	**1,306,519**	**1,109,**
Cattle and calves	247,557	253,250	262,494	231,790	200,
Other livestock	108,164	79,983	82,639	65,509	58,
Meats and other edible packing-house products	635,258	594,779	730,753	703,319	563,
Other animal products	475,401	433,216	302,600	305,901	287,
Mine Products	**82,458,654**	**82,161,162**	**91,953,988**	**97,891,910**	**85,875,**
Coal, bituminous	10,725,702	9,946,243	9,610,093	8,263,950	7,394,
Other coal and coke	2,715,381	2,696,564	2,509,155	2,344,375	2,235,
Iron ore	29,716,750	30,322,943	42,014,424	47,203,408	38,558,
Other ores and concentrates	11,508,223	11,958,267	13,697,629	14,415,298	12,692,
Gravel and sand	7,299,497	6,926,139	5,215,493	5,593,815	5,074,
Stone and rock, broken, ground and crushed	6,123,381	6,079,453	5,459,206	5,084,953	5,674,
Salt	1,461,173	1,276,302	1,363,121	1,337,783	1,177,
Phosphate rock	1,425,307	1,797,824	1,892,099	1,780,205	1,563,
Sulphur	2,060,798	1,988,338	2,257,224	2,522,056	2,673,
Asbestos, not further processed than milled	1,176,143	1,257,248	1,178,713	1,223,540	1,167,
Gypsum, crude	4,709,639	4,490,907	3,721,852	4,221,063	4,431,
Other mine products	3,536,660	3,420,934	3,034,979	3,901,464	3,230,
Forest Products	**18,443,714**	**20,018,162**	**21,037,263**	**21,622,273**	**22,865,**
Logs, butts, bolts, posts, poles and piling, wooden	2,728,026	2,855,912	3,036,932	2,984,641	3,148,
Pulpwood	7,213,616	8,830,935	9,910,266	9,842,169	10,789,
Lumber, shingles and lath	6,871,158	6,638,619	6,369,326	6,849,195	6,972,
Veneer, plywood, and built-up wood	1,061,932	1,186,997	1,160,166	1,308,122	1,326,
Other forest products	568,982	505,699	560,573	638,146	626,
Manufactures and Miscellaneous	**62,848,885**	**65,841,178**	**65,997,755**	**70,986,779**	**73,135,**
Gasoline and petroleum products	8,854,208	9,390,586	10,119,417	10,411,902	10,381,
Fertilizers	4,557,508	5,958,329	6,468,071	7,120,022	6,705,
Iron and steel (bar, sheet, structural, pipe)	5,358,719	5,396,331	4,967,717	5,829,676	5,875,
Automobiles, trucks and parts	2,795,878	3,079,256	3,292,259	3,945,885	4,560,
Cement	2,037,131	2,123,965	1,778,145	1,961,673	1,741,
Wood pulp	3,538,129	3,846,137	4,033,064	4,669,024	5,422,
Newsprint	4,772,914	5,053,177	4,975,404	5,061,511	5,524,
Paper products and articles	2,932,569	3,239,213	3,173,095	3,304,510	3,643,
Food products	1,552,481	1,636,882	1,628,060	1,614,820	1,678,
Feed, animal and poultry	1,546,327	1,340,487	1,310,450	1,265,160	1,249,
Scrap iron and scrap steel	2,189,398	1,968,177	1,623,016	1,777,867	1,905,
Other manufactures and miscellaneous	22,713,623	22,808,638	22,629,057	24,024,729	24,446,
Less-than-Carload Lots	**1,229,470**	**963,702**	**681,401**	**369,183**	**160,**
Grand Totals	**196,816,887**	**205,511,067**	**210,475,044**	**216,396,439**	**207,595,**

Tables **6** to **12** give information on capital liability and capital investment in road and uipment, and on operating revenues, expenses and net income of all common carrier ilways operating in Canada, except that of the Cartier Railway which is not available. Uniform Classification of Accounts has been in operation for the Canadian National and e Canadian Pacific Railways since Jan. 1, 1956 and for other common carrier railways nce Jan. 1, 1957. In transportation statistics, a distinction is made between expenditures d expenses. In the following data, the term 'expenses' is used as defined in the Uniform lassification of Accounts and refers to the expenses of furnishing rail transportation rvice and of operation incident thereto, including maintenance and depreciation of the ant used in such service.

6.—Capital Liability of Railways, 1960-69

(Exclusive of Canadian railway capital owned by Canadian railways)

Year	Stocks	Funded Debt	Total[1]	Year	Stocks	Funded Debt	Total[1]
	$	$	$		$	$	$
60.....	2,725,827,684	2,244,571,812	4,970,399,496	1965.....	2,843,118,935	2,187,613,273	5,030,732,208
61.....	2,748,537,919	2,234,316,735	4,982,854,654	1966.....	2,896,641,376	2,205,599,116	5,102,240,492
62.....	2,769,152,492	2,245,189,028	5,014,341,520	1967r.....	2,867,308,998	2,356,146,688	5,223,455,686
63.....	2,791,044,973	2,183,556,139	4,974,601,112	1968.....	2,897,256,002	2,403,877,606	5,301,133,608
64.....	2,815,148,215	2,181,454,852	4,996,603,067	1969.....	2,963,083,908	2,424,904,752	5,387,988,660

[1] Exclusive of approximately $40,000,000 railway debt in Newfoundland.

7.—Capital Invested in Railway Road and Equipment Property, 1965-69

NOTE.—Credit entries in this table result when the annual "write-offs" are greater than the annual investment in y category.

Investment	1965	1966	1967	1968	1969
	$	$	$	$	$
oad.....	84,097,911	98,279,584	107,331,272	98,531,914	238,542,420
uipment.....	100,984,284	108,644,249	95,014,300	25,377,470	44,642,509
eneral.....	325,546	1,134,113	993,473	1,139,173	1,610,835
ndistributed.....	Cr. 34,923,757	Cr. 18,946,523	7,741,646	60,709,923	Cr. 4,333,071
CNR non-rail property....	*4,768,492*	*8,001,227*	*Cr. 6,250,115*	*6,285,112*	*4,021,328*
CPR " "	*Cr. 43,698,195*	*Cr. 26,876,504*	*11,574,469*	*45,073,798*	*Cr. 8,714,029*
Other " "	*4,005,946*	*Cr. 71,246*	*2,417,292*	*9,351,013*	*359,630*
Totals.....	**150,483,984**	**189,111,423**	**211,080,691**	**185,758,480**	**280,462,693**
mulative investment to Dec. 31.....	7,284,621,061	7,473,732,484	7,684,813,176	7,780,571,655 7,785,979,620[1]	8,066,442,313

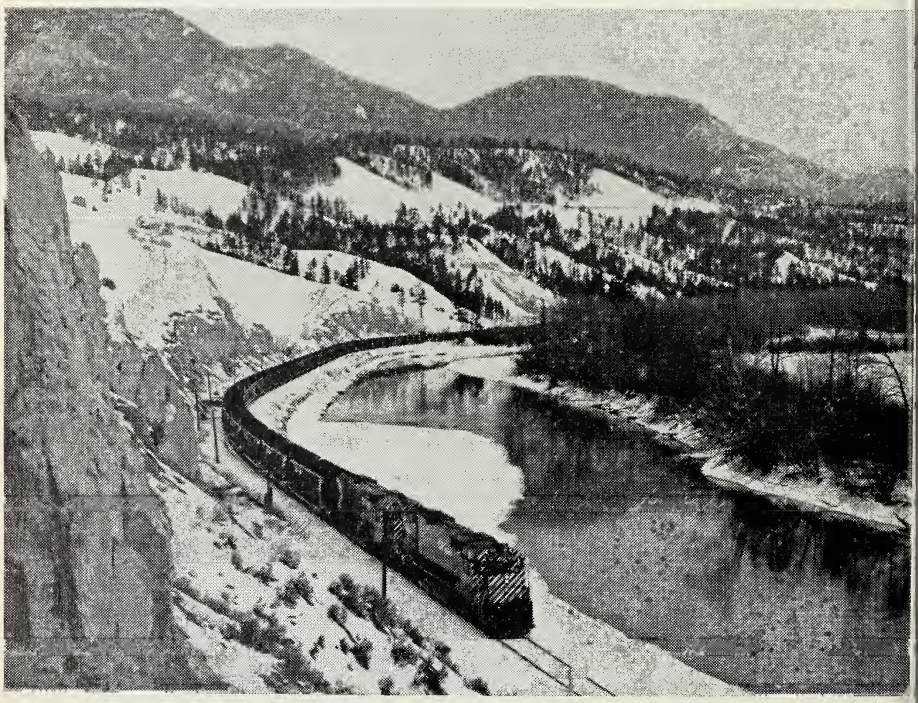
[1] Restatement to reflect transfer of certain non-rail property of one railway to a subsidiary company.

Capital Structure and Financial Statistics of the Canadian National Railway System.— view of the interest in Canada's publicly owned railway, the capital structure of the anadian National Railway System is given separately in Table **8** and financial details Table **9.** The original financial structure of the CNR and the steps taken through the apital Revision Acts of 1937 and 1952 to alleviate the burden of interest undertaken by e company on its formation in 1923 are described in the 1955 Year Book, pp. 840-847. riefly, the Capital Revision Act of 1937 wrote off all loans that had been made to cover eficits and also unpaid interest on loans, and certain loans made for the purpose of additions d betterments were converted to equity capital, relieving the CNR from paying fixed harges on this amount. Under the 1952 Capital Revision Act, 50 p.c. of the company's terest-bearing debt was changed to preferred stock on which, after settling income taxes, dividend of 4 p.c. is paid on earnings. Also, for a term of 10 years ended Jan. 1, 1962, e Railway was not obliged to pay interest on $100,000,000 of its long-term debt. The overnment is authorized to buy additional preferred stock annually in amounts related the company's gross revenues. As a consequence, the proportion of total capitalization presented by equity capital in shareholders' account was raised from 34.5 p.c. at Dec.

31, 1951 to 67.2 p.c. at Jan. 1, 1952, and the proportion of borrowed capital was correspondingly reduced. By the end of 1967, the proportion represented by equity capital in shareholders' account was 50.7 p.c.

8.—Capital Structure of the Canadian National Railway System as at Dec. 31, 1960-69

At Dec. 31—	Shareholders' Capital		Funded Debt Held by Public		Government Loans and Appropriations—Active Assets in Public Accounts	Total
	Government of Canada Shareholders' Account	Capital Stock Held by Public	Guaranteed by Federal and Provincial Governments	Other		
	$	$	$	$	$	$
1960	1,721,143,162	4,499,284	1,677,209,478	3,098,765	148,021,700	3,553,972,389
1961	1,744,673,266	4,499,273	1,670,653,176	2,423,765	164,593,150	3,586,842,630
1962	1,767,976,925	4,499,261	1,630,895,308	2,423,765	209,026,793	3,614,822,052
1963	1,792,380,188	4,485,785	1,378,875,000	2,023,764	410,354,762	3,588,119,499
1964	1,817,243,906	4,345,185	1,367,811,500	2,023,764	410,354,762	3,601,779,117
1965	1,843,209,298	4,345,185	1,366,061,500	2,023,764	410,354,762	3,625,994,509
1966	1,871,426,675	4,345,185	1,325,461,500	2,023,764	445,354,762	3,648,611,886
1967	1,888,727,368	4,345,185	1,196,694,500	2,023,764	645,994,421	3,737,785,238
1968	1,919,098,491	4,345,185	1,130,879,500	2,023,764	786,657,445	3,843,004,385
1969	1,950,991,137	4,345,185	1,049,989,500	2,023,764	846,788,377	3,854,137,963



A 100-car CP Rail train carrying Alberta coal to Vancouver for shipment to Japan. To accommodate Canada's revitalized coal trade with a new unit train system, CP Rail is spending some $35,000,000 on new coal-carrying cars, diesel locomotives and complementary robot power equipment, new and upgraded trackage and new servicing facilities.

The financial details presented in Table 9 are those of the Canadian National Railway System, including both Canadian and United States operations. Revenues and penses include those of express and commercial communications and highway transport ail) operations. In conformity with the requirements of the Uniform Classification of counts adopted Jan. 1, 1956, tax accruals and rents are charged to operating expenses.

Total Revenue, Operating Expenses, Net Revenue, Fixed Charges and Deficits of the Canadian National Railway System (Canadian and United States Operations), 1960-69

Year	Total Operating Revenue	Total Operating Expenses	Income Available for Fixed Charges	Total Fixed Charges	Net Income or Deficit[1]	Cash Deficit or Surplus[2]
	$	$	$	$	$	$
0	693,141,106	705,818,310	1,504,828	69,469,961	Dr. 67,965,133	Dr. 67,496,777
1	710,305,173	722,147,583	5,539,970	73,404,523	" 67,864,553	" 67,307,772
2	738,324,754	738,882,680	23,308,683	74,443,482	" 51,134,799	" 48,919,454
3	762,350,334	752,829,782	36,622,626	76,252,867	" 39,630,241	" 43,013,517
4	822,483,679	811,471,248	37,886,007	74,673,809	" 36,787,802	" 38,725,904
5	870,250,352	855,687,971	43,547,754	73,808,456	" 30,260,702	" 33,414,884
6	953,219,471	923,801,723	62,535,164	76,983,524	" 14,448,360	" 22,155,732
7	995,767,669	986,399,446	40,268,311	79,599,942	" 39,331,631	" 38,306,682
8	1,016,445,288	989,914,723	61,412,780	89,644,744	" 28,231,964	" 29,176,530
9	1,074,880,692	1,044,908,671	73,320,769	96,908,194	" 23,587,425	" 24,646,454

[1] Includes appropriations for insurance fund. [2] Contributed by or paid to the Government of Canada.

Revenues, Expenses and Net Income.—Total operating revenues and expenses of com- on carrier railways operating in Canada (except the Cartier) continued to rise, both aching peak levels in 1969; increases over 1968 amounted to 3.6 p.c. and 4.1 p.c., res- ctively. However, because the increase in expenses was greater than that in revenues, t earnings declined slightly.

Of the total operating expenses in 1969 amounting to $1,496,126,185, "transportation" penses, including the operation of trains, yards, stations, wharves, etc., accounted for .9 p.c.; equipment maintenance for 21.8 p.c.; road maintenance for 18.4 p.c.; rents and xes for 6.9 p.c.; expenses connected with traffic soliciting, such as advertising and informa- n, ticket and freight offices, etc., for 2.8 p.c.; and general and miscellaneous expenses, cluding general overhead, accounting, dining and buffet services, grain elevators, etc., the remaining 11.2 p.c. These proportions have remained fairly constant in recent ars.

10.—Operating Revenues and Expenses of All Railways, 1960-69

NOTE.—These data cover all common carrier rail operations in Canada and therefore do not agree with those sented in Table 11 which represent only 24 of the larger lines.

Year	Total Operating Revenues	Total Operating Expenses	Ratio of Operating Expenses to Operating Revenues	Per Mile of Line			Freight-Train Revenue per Freight-Train Mile	Passenger-Train Revenue per Passenger-Train Mile
				Operating Revenues	Operating Expenses	Net Operating Revenues		
	$	$	p.c.	$	$	$	$	$
0	1,151,655,456	1,109,470,426	96.34	25,544	24,608	936	15.54	3.46
1	1,156,480,700	1,114,432,525	96.36	25,736	24,800	936	16.72	3.32
2	1,165,296,722	1,119,662,072	96.08	26,002	24,984	1,018	16.91	3.56
3	1,210,209,799	1,149,530,526	94.99	27,051	25,695	1,356	17.04	3.51
4	1,324,422,492	1,241,258,655	93.72	29,857	27,982	1,875	17.51	3.64
5	1,372,304,959	1,291,840,958	94.14	30,927	29,114	1,813	17.82	3.68
6	1,480,822,951	1,374,872,316	92.85	33,548	31,148	2,400	19.31	3.72
7	1,519,392,966	1,443,956,115	95.04	34,355	32,649	1,706	18.74	4.28
8	1,528,962,071	1,437,735,624	94.03	34,484	32,427	2,058	21.06	3.85
9	1,583,801,797	1,496,126,185	94.46	35,680	33,705	1,975	21.98	4.13

11.—Rail Operating Revenues, Expenses and Net Income of the Larger Railways, 1968 and 196

Item	CNR		CPR		Totals, 24 Railways	
	1968	1969	1968	1969	1968	1969
	$	$	$	$	$	$
Operating Revenues	**896,671,350**	**951,000,537**	**615,529,028**	**639,694,772**	**1,702,494,018**	**1,771,672,28**
Railway—						
Freight	617,109,139	663,682,246	479,346,542	504,361,837	1,261,857,271	1,324,801,83
Passenger	48,553,115	46,978,398	13,566,720	13,733,573	66,762,398	65,923,97
Sleeping and parlour car	7,864,715	7,697,828	2,879,905	2,936,292	10,819,567	10,710,71
Mail	11,242,732	11,338,009	2,428,585	2,395,239	14,599,236	14,270,29
Express	9,559,953	16,765,315	4,429,204	2,030,706	15,763,656	20,188,42
Switching	3,687,992	3,810,413	3,248,494	3,268,859	10,595,086	10,343,12
Payments relating to the National Transportation Act	55,051,765	47,020,227	38,700,556	33,063,262	95,049,614	81,181,80
Incidental	26,113,996	27,724,761	17,072,245	17,563,595	45,785,398	48,010,44
All other	2,008,906	2,194,920	1,650,902	1,638,770	6,414,489	5,904,36
Totals, Railway	781,192,313	827,212,117	563,323,153	580,992,133	1,527,646,715	1,581,334,98
Express	53,429,945	55,730,479	23,394,579	26,989,450	77,095,203	82,979,27
Commercial communications	54,576,000	59,161,894	28,811,296	31,713,189	89,626,975	97,686,70
Highway transport (rail)	7,473,092	8,896,047	—	—	8,125,125	9,671,33
Operating Expenses	**859,492,081**	**902,987,238**	**571,292,275**	**602,092,982**	**1,594,035,592**	**1,661,775,64**
Railway—						
Road maintenance	142,721,173	153,813,890	85,847,831	83,990,741	261,259,567	269,733,74
Equipment maintenance	174,006,045	179,323,268	113,389,040	119,973,542	314,907,179	328,233,30
Traffic	20,541,664	23,146,656	16,162,098	16,644,639	38,635,677	41,817,09
Transportation (railway line)	295,090,629	311,047,348	202,639,829	221,882,545	547,797,677	582,322,21
Miscellaneous railway operations	17,183,501	16,561,697	5,537,261	5,364,079	22,979,188	22,315,39
General	76,160,661	74,480,506	48,555,588	53,113,945	138,493,609	141,794,23
Equipment rents	Cr. 2,391,714	609,175	Cr. 1,782,854	87,768	5,365,443	9,592,40
Joint facility rents	236,023	52,807	2,101,194	2,428,934	3,592,639	3,683,78
Railway tax accruals	29,595,189	32,478,044	49,347,693	42,619,059	99,991,149	89,281,33
Totals, Railway	753,143,171	791,513,391	521,797,680	546,105,252	1,433,022,128	1,488,773,50
Express	52,361,007	54,338,311	23,252,079	26,799,450	75,886,122	81,397,10
Commercial communications	46,774,360	47,775,787	26,242,516	29,188,280	77,361,885	81,609,82
Highway transport (rail)	7,213,543	9,359,749	—	—	7,765,457	9,995,21
Net Operating Income	**37,179,269**	**48,013,299**	**44,236,753**	**37,601,790**	**108,458,426**	**109,896,64**
Railway	28,049,142	35,698,726	41,525,473	34,886,881	94,624,587	92,561,47
Express	1,068,938	1,392,168	142,500	190,000	1,209,081	1,582,16
Commercial communications	7,801,640	11,386,107	2,568,780	2,524,909	12,265,090	16,076,87
Highway transport (rail)	259,549	Dr. 463,702	—	—	359,668	Dr. 323,88

Railway Accidents.—Accidents shown in Table **12** (for all common carrier railway operating in Canada) include all those in which railway trains were involved and accidents on railway property; all passengers injured are included but, for employees, only those who were kept from work for at least three days during the 10 days following the accident are recorded. The classification of accidents used in reporting other DBS statistics treats collisions between motor vehicles and trains as motor vehicle accidents. Therefore, care should be exercised when compiling total accidental deaths of all kinds or when comparing results of accidents of different kinds, such as train and motor vehicle.

12.—Persons Killed or Injured on Railways, by Specified Cause, 1967-69

Item	1967		1968		1969	
	Killed	Injured	Killed	Injured	Killed	Injured
	No.	No.	No.	No.	No.	No.
ACCIDENTS RESULTING FROM MOVEMENT OF TRAINS, LOCOMOTIVES OR CARS						
Class of Person—						
Passengers	—	209	6	235	4	165
Employees	23	1,265	25	1,168	21	1,182
Trespassers	56	54	50	47	48	58
Non-trespassers	192	461	134	454	121	432
Postal clerks, expressmen, etc.	—	19	—	6	1	15
Totals	**271**	**2,008**	**215**	**1,910**	**195**	**1,852**
Description of Accidents (employees and passengers only)—						
Coupling and uncoupling	—	58	1	81	—	82
Collisions	8	141	5	102	5	78
Derailments	1	22	9	68	3	74
Falling from trains or cars	3	57	—	30	1	37
Getting on or off trains	1	280	1	304	2	317
Struck by trains, etc.	9	18	8	16	3	19
Other causes	1	898	7	802	11	740
Totals	**23**	**1,474**	**31**	**1,403**	**25**	**1,347**
ALL OTHER ACCIDENTS						
Class of Person—						
Employees	10	2,597	9	2,343	12	2,571
Passengers	—	95	—	122	—	86
Others	1	58	1	44	7	57
Totals	**11**	**2,750**	**10**	**2,509**	**19**	**2,714**

PART II.—ROAD TRANSPORT*

Section 1.—Motor Vehicle and Traffic Regulations

The registration of motor vehicles and the regulation of motor vehicle traffic lies within the legislative jurisdiction of the provincial and territorial governments. However, the Federal Government has recently passed legislation establishing motor vehicle safety standards. This legislation is outlined below, followed by summaries of motor vehicle and traffic regulations common to all provinces and territories. The source of information on detailed regulations for each province and territory is given at pp. 907-908.

Federal Safety Regulations

The Motor Vehicle Safety Act (SC 1969-70, c. 30), which was passed by the House of Commons on Mar. 11, 1970 and received Royal Assent on Mar. 25, 1970, became effective Jan. 1, 1971. The general objective of the Act is to establish mandatory safety standards for new motor vehicles for the purpose of protecting persons against injuries or death and the impairment of health by exhaust emission and possibly noise. The legislation is directed to all new motor vehicles and components thereof manufactured in or imported into Canada. The safety of vehicles in use continues to be a provincial responsibility to be discharged under existing provincial legislation.

* Except as otherwise indicated, most of the material in this Part has been revised in the Transportation and Public Utilities Division, Dominion Bureau of Statistics.

The safety regulations currently include 29 standards relating to the design and performance of passenger cars, trucks, buses, motorcycles and trailers, five standards limiting motor vehicle exhaust emissions and ten standards applying to snowmobiles. These regulations will be subjected to continual review and additions or revisions will be incorporated to keep pace with engineering or technical advances. The regulations require all Canadian motor vehicle manufacturers or distributors to apply the national safety mark to every classified vehicle produced after Jan. 1, 1970 and this mark must be accompanied by a label certifying compliance with all applicable federal motor vehicle safety standards. Vehicles imported for commercial or individual use must comply with the Act and Regulations.

Provincial Motor Vehicle and Traffic Regulations*

Operators' Licences.—The operator of a motor vehicle must be over a specified age, usually 16 years (17 in Newfoundland and 18 for class A licence in Alberta), and must carry a licence, obtainable in most provinces only after prescribed qualification tests. Such licence is renewable annually in Saskatchewan, in the Yukon Territory and in the Northwest Territories; in Alberta it is renewable every two years; in Quebec, operator and chauffeur permits expire on the holder's birthday and the odd-numbered year following the issue of renewal thereof; in Prince Edward Island and New Brunswick it is renewable every two years and expires at the end of the licensee's birth month; in Newfoundland and Ontario a licence is issued on a three-year basis and expires on the licensee's birth date; and in Nova Scotia a licence is issued on a three-year basis and expires at the end of the licensee's birth month. Special licences are required for chauffeurs in all provinces except Newfoundland. In most provinces, a motorcycle operator is required to pass a special examination and have his driver's licence endorsed authorizing him to operate such vehicle or, if he has no driver's licence, he may be issued a licence to operate only this class of vehicle. In Alberta a person under 16 but not under 14 years of age may be issued a licence to operate a scooter, which is defined as a motor vehicle with a speed limit not exceeding 30 miles an hour.

Motor Vehicle Regulations.—All motor vehicles and trailers must be registered annually, with the payment of specified fees, and must carry two registration plates, one on the front and one on the rear of the vehicle (one only for the rear of trailers; in New Brunswick two licence plates are issued for all vehicles other than commercial tractors, trailers and motorcycles; in Prince Edward Island, Quebec, Manitoba, Alberta and British Columbia one plate is issued for motorcycles, to be mounted on the rear; in Saskatchewan, motorcycles and snowmobiles carry one plate on the rear and truck tractors carry one plate on the front).

In most provinces, in event of sale the registration plates stay with the vehicle but in Quebec, Manitoba, Saskatchewan and Alberta the plates are retained by the owner. In Nova Scotia, vehicles pass from owner to owner by due process of law and title must be secured before issue of plates and permit. A change of ownership of the vehicle must be recorded with the registration authority. However, exemption from registration is granted for a specified period (usually at least 90 days, except in Quebec where the maximum is three months for non-residents; in Ontario where it is six months for vehicles from other provinces and three months for vehicles registered outside Canada; in Manitoba where residents may use registration plates from other jurisdictions for 90 days, visitors are exempt from registration provided the vehicle is not used for business purposes, and an out-of-province student is exempt from registration provided he obtains a student sticker to be affixed to his windshield and provided the vehicle is properly registered in his home jurisdiction; in Saskatchewan where an out-of-province student may on application extend the period of exemption from registration requirements for the whole school year, provided the vehicle is properly registered in its home jurisdiction; in Alberta where non-residents may operate vehicles currently registered in their home province or state of the United States for a period not exceeding six months and in British Columbia where it is one month or six

* Revised according to information received from the respective provincial and territorial authorities concerned.

months for tourists and where an out-of-province student may extend the period of registration requirements for the whole school year, provided the vehicle is properly registered in its home jurisdiction). Regulations require a safe standard of efficiency in the mechanism of the vehicle and of its brakes and stipulate that equipment include non-glare headlights, a proper rear light, a muffler, a windshield wiper, a rear-vision mirror, and a warning device. In Ontario, under a 1968 amendment to the Highway Traffic Act, a certificate of roadworthiness is required for a vehicle sold on the second-hand market before a permit is issued for its operation.

Traffic Regulations.—In all provinces and territories, vehicles keep to the right-hand side of the road. Everywhere motorists are required to observe traffic signs, lights, etc., placed at strategic points on highways and roads. The speed limit in Prince Edward Island, unless otherwise posted, is 60 miles an hour in daytime and 55 at night; in Manitoba, the basic speed limit is 60 miles an hour in daytime and 50 at night unless otherwise posted—speed limits may be raised to 70 miles an hour or modified in semi-built-up areas; in Alberta it is 60 in daytime and 50 at night, with the exception of a few selected sections of four-lane highway where higher speeds may be posted; in Nova Scotia the limit is a "reasonable and prudent" speed, with a maximum of 60 miles an hour except where 65 miles an hour is authorized; in New Brunswick, maximum speeds vary from 50 to 60 miles an hour depending on type of highway; and in Ontario and Quebec maximum speeds vary from 50 to 70 miles an hour, depending on type of highway. In the other provinces the maximum speed permitted is normally 50 miles an hour; in Saskatchewan and British Columbia where higher speeds are in effect they are posted. In Yukon Territory the speed limit for all vehicles is 60 miles an hour, unless otherwise posted. In the Northwest Territories, the highway limit is 60 miles an hour for all vehicles, day or night, except as otherwise posted, and in municipalities it is 30 miles an hour except as posted. Slower speeds are required in cities, towns and villages (in Nova Scotia and British Columbia when passing schools and public playgrounds), at road intersections, railway crossings or at other places or times where the view of the highway for a safe distance ahead is in any way obscured. In most provinces, truck speed limits are at least five miles an hour below automobile speed limits, although in Manitoba, Saskatchewan and British Columbia they are the same as for passenger vehicles. In most provinces, accidents resulting in personal injury or property damage in excess of $200 ($100 in Newfoundland, Prince Edward Island, Nova Scotia, Quebec and the Yukon and Northwest Territories) must be reported to a police officer (in Nova Scotia to the Registrar of Motor Vehicles or to a police officer; in Quebec to a police officer or to the Motor Vehicle Bureau) and a driver involved must not leave the scene of an accident until he has rendered all possible aid and disclosed his name to the injured party.

Driver Licensing Controls.—All provinces and territories impose penalties for infractions of driving regulations, ranging from fines for minor infractions to suspension of the operator's driving permit, impounding of licence or imprisonment for more serious infractions. In most provinces penalties have been linked to a driver-improvement program, the aim of which is to correct faulty driving habits, not to take drivers off the road. The most common driver-improvement program includes the demerit-point-system.

Safety Responsibility Legislation.—Each province (other than British Columbia) has enacted safety responsibility legislation (sometimes referred to as financial responsibility legislation). In general, these laws provide for the automatic suspension of the driver's licence and motor vehicle registration of a person convicted of a serious offence (impaired driving, driving under suspension, dangerous driving, etc.). It also provides for the automatic suspension of a person's driving licence and registration of the owner whose uninsured vehicle is involved directly or indirectly in an accident resulting in damage in excess of $200 or injury or death to any person (in Nova Scotia, Ontario, Manitoba, British Columbia, the Northwest Territories and Alberta the amount is $100). In Saskatchewan, Alberta and Quebec, if a Judgment is rendered for damages against the driver or owner, the driver's

licence and registration remain suspended until the Judgment is satisfied and proof of financial responsibility for the future is filed. In Saskatchewan, the Yukon Territory and the Northwest Territories uninsured motor vehicles may be impounded following an accident of any consequence, i.e., an accident resulting in personal injury or death, or property damage in excess of $100 ($200 in Saskatchewan). In the Province of Quebec, furthermore, pursuant to the Code of Civil Procedure, the plaintiff may seize before Judgment the motor vehicle which has caused him damage whatever the amount of property damage whether covered for third-party insurance or not. In Ontario, Manitoba, Alberta and British Columbia the non-resident motorist is not required to carry or produce any form of proof of insurance. In Manitoba, proof of insurance must be supplied at the time of registration but if such insurance expires or is cancelled registration of the vehicle is not suspended unless the vehicle is involved in an accident.

In the Yukon Territory and the Northwest Territories, proof of insurance must be supplied before vehicle licence is issued, and when the insurance expires or is cancelled vehicle licence plates must be returned to the Registrar of Motor Vehicles. By order, the Yukon Commissioner and the Northwest Territories Commissioner may exempt certain areas from the insurance requirement.

Unsatisfied Judgment Fund.—Legislation has been enacted in all provinces except Saskatchewan and in the Yukon Territory, usually in the form of an amendment to the motor vehicle laws of the province or territory, providing for the establishment of a fund, frequently called an Unsatisfied Judgment Fund (in New Brunswick, the Unsatisfied Judgment Fee; in Ontario, the Motor Vehicle Accident Claims Act; in Alberta, the Motor Vehicle Accident Claims Fund; and in British Columbia, the Traffic Victims' Indemnity Fund), out of which are paid Judgments awarded for damages arising out of motor vehicle accidents in the province which cannot be collected in the ordinary process of law. In Newfoundland, Prince Edward Island, Nova Scotia, Quebec and British Columbia the fund is maintained by insurance companies. In all the other provinces, except Saskatchewan where insurance is compulsory, the funds are obtained by the annual collection of a fee from the registered owner of every motor vehicle or from every person to whom a driver's licence is issued. The fee usually does not exceed $1 per annum; in New Brunswick the fee is $3 a year; in Ontario a fee of $25 is paid by the uninsured motorist (in the absence of the fee being paid the uninsured, if apprehended, is liable to a fine) and, in addition, the fund is subsidized by a $1 annual charge from each licensed driver; in Alberta $20 is collected from each uninsured owner of a motor vehicle at the time of registration or transfer; and Manitoba collects an additional $25 from each uninsured owner at the time of registration.

A feature of this legislation, which is contained in some provincial statutes, is the provision for the payment of Judgments in hit-and-run accidents. When these occur, if neither the owner nor the driver can be identified, action may be taken against the Registrar of Motor Vehicles (the Minister of Finance in Newfoundland and the Administrator of the Motor Vehicle Accident Claims Fund in Alberta); any Judgment secured against the responsible authority is paid out of the Fund. All of these laws contain a provision limiting the amount that can be paid out of the Fund on one Judgment. In Newfoundland and Nova Scotia, the limits are $10,000 for one person, $20,000 for two or more persons injured in one accident and $5,000 for property damage. In Nova Scotia and New Brunswick, the limit is $35,000 in respect of any one accident. In Prince Edward Island and Quebec, the limit is $35,000 for all damages in the same accident, subject to a deduction of $200 from all damage to the property of others; damages resulting in bodily injury or death are, up to $30,000, payable by priority over damages to property and the latter are, up to $5,000, payable by priority over the former out of the amount of any insurance or other guarantee of indemnity. In British Columbia, the limit is based on the single amount of $50,000 for any one accident with the provision that not more than $5,000 may be paid on a property damage claim until injury claims up to $45,000 have been satisfied; the $50,000 limit exists for hit-and-run accidents but does not apply to

yments for property damage. In Alberta, the limit is $35,000 for death or personal ury to one or more persons and $5,000 for damage to property, subject to a limit of 5,000 in any one accident; where in one accident claims result from bodily injury to or ath of one or more persons and loss of or damage to property, claims arising out of bodily ury or death have priority over claims arising out of loss of or damage to property to the ount of $30,000, and claims arising out of loss of or damage to property have priority er claims arising out of bodily injury or death to the amount of $5,000. In Manitoba, e limit based on one accident is $35,000, with Judgments arising out of bodily injury or ath having priority to the extent of $30,000 over claims resulting from loss of or damage property; and Judgments arising out of loss of or damage to property having priority to e extent of $5,000 over Judgments resulting from bodily injury or death; the maximum ount payable for a single Judgment resulting from loss of or damage to property is $3,000, oject to a deduction of $200.

In Ontario, the Motor Vehicle Accident Claims Act passed in 1962 replaced the Unisfied Judgment Fund which had been in effect since 1947. The new Act was streamed to adjust promptly and efficiently all those claims incurred by the uninsured motorist. aims could be adjusted much the same as by the insurance companies. The limits under amendment to the Act of September 1969 are $50,000, inclusive of $5,000 for any property mage claim. Many small claims are handled by the Ontario Department of Transport, oject to a $50 franchise clause in respect to property damage, but the procedure is such at claims can be settled under Sect. 5 of the Act without resort to litigation. Sect. 6 vers Judgment cases and Sects. 11 and 14 cover the hit-and-run cases in which a Judgment necessary and property damage is not payable. A 1968 amendment to the Act gave the inister of Transport power to act where the defendant is an infant.

Sources of information on provincial motor vehicle and traffic regulations:—

wfoundland

Administration.—The Minister of Highways, St. John's.

Legislation.—The Highway Traffic Act, 1962 (amended 1964).

ince Edward Island

Administration.—The Provincial Secretary, Charlottetown.

Legislation.—The Highway Traffic Act (SPEI 1964, c. 14).

va Scotia

Administration.—Registry of Motor Vehicles, Department of Highways, Halifax.

Legislation.—The Motor Vehicle Act (SNS 1967, c. 191, as amended) and the Motor Carrier Act (1967, c. 190, as amended).

w Brunswick

Administration.—Motor Vehicle Branch, Department of Provincial Secretary, Fredericton.

Legislation.—The Motor Vehicle Act (RSNB 1955, as amended).

uebec

Administration.—Motor Vehicle Bureau, Department of Transport, Parliament Bldgs., Quebec.

Legislation.—The Highway Code (RSQ 1964, c. 231, as amended) and the Highway Victims Indemnity Act (RSQ 1964, c. 232).

ntario

Administration.—Ontario Department of Transport, Toronto.

Legislation.—The Highway Traffic Act (RSO 1960, c. 172, as amended), the Public Vehicles Act (RSO 1960, c. 337, as amended), the Public Commercial Vehicles Act (RSO 1960, c. 319, as amended), and the Motor Vehicle Accident Claims Act (SO 1961-62, c. 84, as amended).

nitoba

Administration.—Minister, Department of Transportation, Winnipeg.

Legislation.—The Highway Traffic Act (SM 1970, c. H60) and the Unsatisfied Judgment Fund Act (SM 1970, c. U70).

Saskatchewan

Administration.—Highway Traffic Board, Saskatchewan Power Bldg., Regina.

Legislation.—The Vehicles Act, 1965.

Alberta

Administration and Legislation.—The Motor Vehicle Accident Claims Act (SA 1964, c. 56) a the Highway Traffic Act (SA 1967, c. 30) are administered by the Motor Vehicle Bran Department of Highways, Edmonton. The Public Service Vehicles Act (RSA 1955, c. 2 and the Rules and Regulations are administered by virtue of authority vested in the Hi way Traffic Board, Department of Highways, Edmonton.

British Columbia

Administration and Legislation.—Enforcement of the Motor Vehicle Act, the Commercial Tra port Act and the Motor Carrier Act is vested in the Royal Canadian Mounted Police a the various municipal police forces. The Motor Carrier Act is administered by the Pul Utilities Commission, the Motor Vehicle Act by the Superintendent of Motor Vehicles a the Commercial Transport Act by the Minister of Commercial Transport, Victoria, B.C

Yukon Territory

Administration.—Commissioner of the Yukon Territory, Whitehorse, Y.T. Informat regarding regulations may also be obtained from the Registrar of Motor Vehicles, Gove ment of the Yukon Territory, Whitehorse, Y.T.

Legislation.—The Motor Vehicles Ordinance (Revised Ordinances 1958, c. 77, as amended).

Northwest Territories

Administration.—Commissioner of the Northwest Territories, Yellowknife, N.W.T.

Legislation.—The Vehicles Ordinance (1967, c. 9, second session).

Section 2.—Highways, Roads and Streets

Highways and Roads.—The populated sections of Canada are well supplied wi highways and roads. Access to outlying settlements is provided to some extent by roa built by logging, pulp and paper, and mining companies, although these are not general available for public travel. At the same time, great areas of Newfoundland, Quebe Ontario, the Prairie Provinces, British Columbia and the Territories are very sparse settled and are virtually without roads of any kind.

At the end of 1968, the reported mileage of highways and rural roads was 476,6 miles, a figure that includes all roads under provincial jurisdiction, federal roads and lo roads under municipal jurisdiction other than the roads and streets in census metropolit areas and urban centres of more than 1,000 population. Mileage for the latter is giv separately under the heading of "Urban Streets".

1.—Highway and Rural Road Mileage classified by Type and by Province, 1968

Province or Territory	Surfaced			Earth	Total
	Rigid Pavement	Flexible Pavement	Gravel		
	miles	miles	miles	miles	miles
Newfoundland	—	1,168	4,192	874	6,2
Prince Edward Island	595	837	1,200	648	3,2
Nova Scotia	4,675	67	4,373	6,523	15,6
New Brunswick	—	5,181	8,136	14	13,3
Quebec	14,326	1,276	31,706	9,240	56,5
Ontario	1,309	19,379	55,811	3,577	80,0
Manitoba	269	3,785	27,581	13,136	44,7
Saskatchewan[1]	3	6,936	57,083	63,471	127,4
Alberta	13	5,472	59,383	32,283	97,1
British Columbia	14	7,196	14,713	7,057	28,9
Yukon and Northwest Territories	2	4	3,095	—	3,1
Canada	**21,206**	**51,301**	**267,273**	**136,823**	**476,6**

[1] Includes road allowances.

Expenditure on highways and rural roads in the year ended Mar. 31, 1969, totalled ,330,965,000, little changed from the previous year; construction expenditures decreased y 3.3 p.c. and maintenance costs rose by 5.3 p.c.

—Construction, Maintenance and General Expenditure on Highways, Rural Roads, Bridges and Ferries, by Province, Years Ended Mar. 31, 1968 and 1969

Item and Province or Territory	1968[r]	1969	Item and Province or Territory	1968[r]	1969
	$'000	$'000		$'000	$'000
nstruction	**892,541**	**862,857**	**Administration and General**[1]	**81,650**	**85,432**
Newfoundland	33,206	37,034	Newfoundland	929	1,186
Prince Edward Island	10,407	9,168	Prince Edward Island	422	430
Nova Scotia	43,797	50,279	Nova Scotia	2,930	1,868
New Brunswick	49,367	32,360	New Brunswick	2,739	3,156
Quebec	191,628	193,390	Quebec	9,664	10,177
Ontario	287,383	280,728	Ontario	50,268	52,679
Manitoba	30,102	32,221	Manitoba	3,911	4,513
Saskatchewan	66,925	63,287	Saskatchewan	2,829	2,722
Alberta	79,811	66,790	Alberta	957	1,162
British Columbia	85,786	82,937	British Columbia	5,669	6,137
Yukon and Northwest Territories	14,129	14,663	Yukon and Northwest Territories	1,056	1,112
aintenance	**363,578**	**382,676**	**Totals**	**1,337,769**	**1,330,965**
Newfoundland	13,188	13,562			
Prince Edward Island	3,856	3,505			
Nova Scotia	16,638	18,109			
New Brunswick	15,275	17,076	**Distribution of Expenditure—**		
Quebec	96,599	97,122			
Ontario	102,498	108,061	Federal	152,404	133,957
Manitoba	12,763	14,883			
Saskatchewan	20,004	21,381	Provincial	1,048,515	1,057,729
Alberta	31,888	32,790			
British Columbia	41,697	45,759	Municipal	125,671	133,588
Yukon and Northwest Territories	9,172	10,428	Other	11,179	5,401

[1] Includes federal administrative costs *re* Trans-Canada Highway amounting to $276,000 in 1967-68 and $290,000 1968-69.

Urban Streets.—Information on urban streets is obtained from the local administra- ons of all areas with populations of over 1,000, all areas located within census metro- olitan areas, improvement districts with over 1,000 population and rural municipalities ith over 15,000 population. Brief statistical data are given in Table **3**; more detail may e obtained from DBS annual report *Road and Street Mileage and Expenditure* (Catalogue o. 53-201).

3.—Statistics of Urban Streets, 1966-68

Item		1966	1967	1968
tal Expenditure Reported[1]	$'000	**378,692**	**386,591**	**406,756**
New construction	"	202,685	191,801	206,812
Reconstruction, repair, cleaning, sanding, snow removal, administration, etc	"	176,007	194,790	199,944
tal Urban Mileage	No.	**44,930**	**45,988**	**48,130**
Rigid pavement	"	7,374	6,697	6,617
Flexible pavement	"	21,640	23,555	25,399
Gravel and other surfaces	"	14,258	13,978	14,156
Earth	"	1,658	1,758	1,958

[1] Includes expenditures on sidewalks, footpaths, bridges and ferries.

Section 3.—Motor Vehicles

Motor Vehicle Registrations.—Registrations continue to increase year by year, record of 8,254,160 being reached in 1969. Of that total, 6,433,283 were passenger car Registrations by province are given in Table 4 and types of vehicles registered by provin in Table 5.

4.—Motor Vehicles Registered, by Province, 1960-69

NOTE.—Registrations given here include passenger cars, trucks, buses, motorcycles, service cars, etc., but r trailers or dealer licences.

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1960.....	61,952	30,147	187,065	138,469	1,096,053	2,062,484	285,689	335,148	486,370	564,351	5,256,3
1961.....	65,270	32,166	206,691	145,951	1,183,978	2,126,270	299,998	349,817	509,298	588,280	5,517,0
1962.....	74,119	33,888	206,370	151,360	1,281,180	2,177,148	312,272	372,219	535,459	620,426	5,774,8
1963.....	79,422	35,314	212,034	156,768	1,381,801	2,268,320	324,806	382,190	560,490	662,453	6,074,6
1964.....	87,990	35,062	222,827	165,311	1,441,201	2,381,219	339,509	396,742	583,713	716,644	6,382,0
1965.....	92,885	33,849	233,653	174,428	1,480,743	2,516,680	342,335	418,606	606,754	786,310	6,698,7
1966.....	95,704	35,299	234,532	183,676	1,556,342	2,643,474	356,693	438,558	638,852	838,992	7,035,2
1967.....	100,322	36,844	246,384	188,617	1,769,154	2,736,366	371,077	467,495	676,270	887,736	7,495,2
1968.....	108,220	37,152	276,609[r]	198,406	1,888,934	2,869,588	380,488	464,017	703,151	941,935	7,887,0
1969.....	112,027	38,812	314,547	199,980	1,998,001	2,953,789	394,975	472,363	735,729	1,014,301	8,254,1

[1] Includes registrations in the Yukon and Northwest Territories; in 1969 they numbered 11,855 and 7,781, r spectively.

5.—Types of Motor Vehicles Registered, by Province, 1968 and 1969

Year and Province or Territory	Passenger Cars[1]	Commercial Cars, Trucks, etc.[2]	Buses	Motor-cycles	Total
	No.	No.	No.	No.	No.
1968					
Newfoundland	81,459	25,063	713	985	108,220
Prince Edward Island	27,752	8,515	206	679	37,152
Nova Scotia	207,477	63,389	1,410	4,333	276,609
New Brunswick	157,444	36,281	1,127	3,554	198,406
Quebec	1,448,120	385,771	14,420	40,623	1,888,934
Ontario	2,424,916	385,242	11,604	47,826	2,869,588
Manitoba	288,750	86,543	242	4,953	380,488
Saskatchewan	287,611	168,426	4,115	3,865	464,017
Alberta	486,401	197,893	4,649	14,208	703,151
British Columbia	740,979	182,492	[3]	18,464	941,935
Yukon and Northwest Territories	8,664	8,988	128	797	18,577
Canada, 1968	**6,159,573**	**1,548,603**	**38,614**	**140,287**	**7,887,077**
1969					
Newfoundland	85,667	24,398	806	1,156	112,027
Prince Edward Island	29,229	8,700	231	652	38,812
Nova Scotia	232,940	75,685	1,327	4,595	314,547
New Brunswick	156,102	39,279	1,169	3,430	199,980
Quebec	1,534,682	406,832	14,967	41,520	1,998,001
Ontario	2,501,718	400,156	12,040	39,875	2,953,789
Manitoba	299,695	89,883	245	5,152	394,975
Saskatchewan	284,356	180,036	4,111	3,860	472,363
Alberta	508,835	205,739	4,785	16,370	735,729
British Columbia	790,493	202,903	[3]	20,905	1,014,301
Yukon and Northwest Territories	9,566	9,149	74	847	19,636
Canada, 1969	**6,433,283**	**1,642,760**	**39,755**	**138,362**	**8,254,160**

[1] Includes taxis. [2] Includes service cars, road tractors, farm tractors, etc. [3] Included with truck

Apparent Supply of Automobiles.—The apparent supply of automobiles in Canada n any year is computed by deducting the number exported from the sum of the production nd imports. Statistics regarding retail sales and the financing of motor vehicle sales are iven in Chapter XXI on Domestic Trade and Prices.

6.—Apparent Supply of New Automobiles, 1960-69

Year	Cars Made for Sale in Canada		Car Imports		Re-exports of Imported Cars		Apparent Supply	
	Passenger	Commercial	Passenger	Commercial	Passenger	Commercial	Passenger	Commercial
	No.	No.	No.	No.	No.	No.	No.	No.
960	307,499	66,293	170,653	9,376	179	56	477,973	75,613
961	312,599	60,332	106,865	9,487	700	35	418,764	69,784
962	412,120	78,094	94,655	4,413	194	67	506,581	82,440
963	513,785	93,912	59,634	3,193	391	38	573,028	97,067
964	520,743	104,446	92,490	3,160	1,277	17	611,956	107,589
965	636,738	119,917	136,446	6,675	1,192	41	771,992	126,551
966	506,111	115,192[r]	188,667	16,172	379	45	694,399	131,319[r]
967	365,521	99,818[r]	313,692	32,100	745	59	678,468	131,859[r]
968	379,344	101,912	436,964	48,031	1,054	60	815,254	149,883
969	328,658	88,096	457,670	65,304	1,058	64	785,270	153,336

Provincial Government Revenue from Motor Vehicles.—The taxation of motive uels, motor vehicles, garages, drivers, chauffeurs, etc., is an important source of provincial overnment revenue. In every province, licences or permits duly issued by the provincial uthorities are required for motor vehicles of all kinds, trailers, operators or drivers, paid hauffeurs, dealers, garages and gasoline and service stations. In 1969, the average cost er motor vehicle for operating taxes and licences was about $169 compared with $162 1968.

The more important sources from which provincial revenue from motor vehicles is erived are shown in Table 7. Motive fuel tax rates are given in the Public Finance hapter, Section 2, Subsection 2 on Provincial Taxes; Federal Government revenue from xcise and sales taxes is given in the same Chapter, Section 3, Subsection 3 on Revenue om Taxation.

7.—Provincial Revenue from the Registration and Operation of Motor Vehicles, by Province, Years Ended Mar. 31, 1968 and 1969

Year and Province or Territory	Passenger Automobile Licences	Truck, Bus, Trailer and Other Vehicle Licences	Motoreycle Licences	Chauffeur, Driver and Dealer Licences[1]	Public Service Vehicle Tax	Motive Fuel Taxes	Total[2]
1967-68	$	$	$	$	$	$	$
ewfoundland	1,505,021	2,078,177	8,871	479,580	347	13,925,000	18,736,106
rince Edward Island	518,518	373,760	2,366	119,735	1,000	4,046,480	5,130,667
ova Scotia	3,540,458	3,570,953	[3]	685,827	142,352	28,439,134	37,057,211
ew Brunswick	3,501,675	3,054,200	23,288	449,214	—	24,117,141	31,723,294
uebec	29,057,372	31,462,980	133,084	7,235,739	1,966,586	214,796,146	287,083,996
ntario	46,401,341	45,566,614	449,304	3,946,209	4,812,931	304,741,335	411,859,457
anitoba	5,754,868	4,934,948	27,374	2,284,890	1,603,748	39,982,341	55,529,453
askatchewan	4,088,202	5,453,431	[4]	614,607	—	35,975,213	47,346,638
lberta	7,117,072	10,080,305	[5]	1,632,417	278,830	49,463,686	70,230,783
ritish Columbia	13,728,244	11,667,004	78,526	1,189,905	401,910	65,080,043	94,159,553
ukon and N.W.T.	90,947	110,262	1,691	32,167	101,310	1,246,473	1,665,827
Canada, 1967-68	**115,303,718**	**118,352,634**	**724,504**[6]	**18,670,290**	**9,309,014**	**781,812,992**	**1,060,522,985**

For footnotes, see end of table, p. 912.

7.—Provincial Revenue from the Registration and Operation of Motor Vehicles, by Province, Year Ended Mar. 31, 1968 and 1969—concluded

Year and Province or Territory	Passenger Automobile Licences	Truck, Bus, Trailer and Other Vehicle Licences	Motorcycle Licences	Chauffeur, Driver and Dealer Licences[1]	Public Service Vehicle Tax	Motive Fuel Taxes	Total[2]
1968-69	$	$	$	$	$	$	$
Newfoundland	1,685,561	2,291,668	9,758	538,082	36,366	18,067,682	23,478,69
Prince Edward Island	599,929	414,598	2,580	164,116	33,095	4,974,934	6,297,95
Nova Scotia	4,237,916	4,027,040	[3]	627,232	176,056	31,300,909	41,257,85
New Brunswick	3,676,762	3,117,796	21,317	473,328	—	26,251,328	34,291,34
Quebec	43,472,626	33,840,641	406,230	4,110,185	2,336,818	262,761,398	350,417,31
Ontario	65,644,782	52,595,259	374,034	4,294,824	4,764,247	363,579,715	509,030,53
Manitoba	5,953,481	5,036,575	27,122	217,627	1,578,267	41,448,756	55,215,48
Saskatchewan	5,694,273	6,456,261	[4]	1,126,746	—	46,141,878	60,742,07
Alberta	9,762,806	10,972,051	[5]	692,324	246,718	68,512,086	92,393,49
British Columbia	14,755,477	13,253,336	87,089	1,148,379	445,342	69,413,791	101,457,50
Yukon and N.W.T.	129,278	151,604	1,955	43,435	132,406	2,835,114	3,402,68
Canada, 1968-69	**155,612,891**	**132,156,829**	**930,085**[6]	**13,436,278**	**9,749,315**	**935,287,591**	**1,277,984,91**

[1] Operators' licences are issued for different periods in different provinces; see p. 904 for provincial regulations. [2] Includes other items not shown such as transfer of motor vehicles, garage and service station licences, and fines fo infractions of motor vehicle laws. [3] Included with other motor vehicles. [4] Included with miscella neous revenues and therefore in total. [5] Included with passenger automobiles. [6] Not complete.

Sales of Motive Fuels.—In order to estimate the total amount of motive fuel purchased in Canada for use in motor vehicles on public streets and highways, it has been necessary to eliminate from the total the amount of motive fuel used for other purposes. Thus, from the total or gross sales, including imports and exports, the following are subtracted to obtain net sales: tax exempt sales to the Federal Government and other consumers, exports, and sales on which refunds were paid. Net sales are thus defined as sales on which a tax or taxes have been paid in full and are considered to approximate the actual amount of motive fuel purchased in Canada for use on public streets and highways. As shown in Table 8, consumption of taxable gasoline, which is used almost entirely for automotive purposes, rose 4.7 p.c. in 1968 and net sales of diesel oil 8.1 p.c.

8.—Sales of Motive Fuels, by Province, 1964-68

Province or Territory	1964	1965	1966	1967	1968
	Gasoline and Liquefied Petroleum Gases				
	gal.	gal.	gal.	gal.	gal.
Newfoundland	51,205,828	59,214,001	64,865,831	68,156,858	74,291,782
Prince Edward Island	20,753,975	21,625,345	23,912,161	23,979,138	26,035,265
Nova Scotia	129,977,561	136,170,762	145,158,633	150,583,472	163,869,289
New Brunswick[r]	112,124,074	120,279,985	128,029,906	134,780,888	142,285,107
Quebec	938,822,568	1,060,362,285	1,144,022,116	1,200,647,032	1,258,472,161
Ontario	1,594,284,345	1,673,758,797	1,769,013,364	1,852,182,953	1,957,921,413
Manitoba	225,783,740	232,410,160	241,251,953	247,161,278	259,581,074
Saskatchewan	318,863,410	351,479,362	370,163,766	368,955,997	348,403,199
Alberta	439,543,671	457,092,775	481,041,874	497,666,777	523,684,616
British Columbia	422,975,317	441,806,409	492,890,837	534,953,600	558,722,384
Yukon and N.W.T.	8,478,347	8,739,575	9,742,794	11,130,271	13,993,533
Totals, Gross Sales	**4,262,812,836**	**4,562,939,456**	**4,870,093,235**	**5,090,198,264**	**5,327,259,810**
Refunds and exemptions	551,673,174	563,554,501	598,126,797	610,109,931	569,183,882
Totals, Net Sales	**3,711,139,662**	**3,999,384,955**	**4,271,966,438**	**4,480,088,333**	**4,758,075,934**
	Diesel Oil				
	gal.	gal.	gal.	gal.	gal.
Totals, Net Sales	**210,642,160**	**259,943,441**	**299,389,896**	**317,757,198**	**343,414,011**

Motor Carriers—Freight.*—Statistics of the common carrier segment of the inter-ity and rural motor carrier industry have been collected on a continuing basis since 1941. tatistics of contract carriers are available from 1958.

9.—Summary Statistics of Motor Carriers—Freight, 1967 and 1968

Item		Common		Contract	
		1967	1968	1967	1968
arriers Reporting	No.	**2,631**	**2,787**	**1,631**	**1,635**
roperty Account—Fixed Assets (Motor carrier business)	$	**461,761,519**	**517,023,335**	**135,079,880**	**147,799,125**
perating Revenues	$	**689,095,785**	**786,394,487**	**154,685,643**	**174,790,255**
Freight—					
Intercity and rural	$	663,088,144	755,534,173	144,471,683	163,165,994
Local	$	10,432,952	11,927,282	4,868,572	5,089,111
Other	$	15,574,689	18,933,032	5,345,388	6,535,150
perating Expenses	$	**652,369,491**	**738,594,206**	**144,783,888**	**163,064,319**
Maintenance	$	84,276,480	94,708,863	23,736,749	27,136,252
Wages of drivers and helpers	$	141,185,349	166,162,795	33,614,607	42,152,487
Other (fuel, insurance, fuel taxes, rents, depreciation and purchased transportation)	$	244,839,608	270,506,477	60,120,203	61,336,069
Licence expense	$	19,406,506	20,764,593	4,632,240	5,298,381
Administration and general	$	162,661,548	186,451,478	22,680,089	27,141,130
et Operating Revenues	$	**36,726,294**	**47,800,281**	**9,901,755**	**11,725,936**
uel Consumed—					
Gasoline	'000 gal.	94,468	98,922	29,795	30,668
Diesel oil	"	71,218	81,572	18,323	20,958
Liquefied petroleum gases	"	278	—	44	—
mployees—					
Average employed during year	No.	42,918	45,281	7,955	8,922
Total salaries and wages	$	253,989,426	298,350,557	45,836,546	57,264,334
Working proprietors	No.	1,656	1,628	1,057	1,028
Withdrawals of working proprietors	$	7,494,661	7,885,714	5,486,864	6,221,675
quipment—					
Trucks with gasoline engines	No.	12,373	13,054	4,580	5,041
Trucks with diesel engines	"	859	847	433	484
Road tractors with gasoline engines	"	8,301	8,006	1,762	1,822
Road tractors with diesel engines	"	6,296	7,144	1,498	1,906
Semi-trailers	"	23,082	24,810	4,295	4,670
Trailers	"	3,520	3,809	772	753

Household Goods Movers and Storage Operators.†—Statistics of household oods movers and storage operators, summarized in Table **10**, were first presented sep-rately in 1960; before that date, they were included either with motor carriers—freight r with warehousing, depending upon the predominant source of operating revenues of he companies concerned.

* Statistics are given in more detail in DBS annual report *Motor Carriers—Freight*, Part I (Catalogue No. 53-222) nd Part II (Catalogue No. 53-223).

† Statistics are given in more detail in DBS annual report *Moving and Storage, Household Goods* (Catalogue No. 3-221).

10.—Summary Statistics of Household Goods Movers and Storage Operators, 1964-68

Item		1964	1965	1966	1967	1968
Companies Reporting	No.	228	222	246	287	31
Investment in Land, Warehouses, Vehicles, etc.	$	33,828,214	36,677,325	44,415,161	52,408,118	55,737,68
Revenues	$	45,565,248	50,829,107	69,010,938	77,893,273	77,988,76
Cartage	$	30,532,243	33,405,626	46,260,871	52,858,891	51,642,60
Storage	$	5,558,646	6,716,600	8,707,749	9,600,643	9,848,53
Packing	$	4,615,712	5,432,317	6,128,807	7,532,976	8,265,647
Other	$	4,858,647	5,274,564	7,913,511	7,900,763	8,231,981
Operating Expenses	$	43,395,634	47,918,103	65,822,360	75,447,004	75,808,29
Maintenance	$	3,206,190	3,412,197	4,907,822	4,733,003	5,195,96
Salaries and wages (charged to operations)	$	13,935,847	16,437,937	21,695,553	24,467,961	23,266,63
Cartage expenses	$	3,332,249	3,117,692	5,461,210	5,501,160	5,832,441
Storage expenses	$	2,641,829	2,865,304	3,945,071	4,947,441	4,626,319
Other operating expenses	$	20,279,519	22,084,973	29,812,704	35,797,439	36,886,92
Net Operating Revenues	$	2,169,614	2,911,004	3,188,578	2,446,269	2,180,471
Employees—						
Average employed during year	No.	4,450	4,864	5,927	6,520	6,296
Salaries and wages	$	19,355,843	21,725,734	28,578,027	33,863,279	34,043,804
Storage Capacity—						
Household goods	cu. ft.	33,888,412	35,333,750	46,616,388	49,165,489	50,227,473
Other	"	7,650,548	12,630,680	15,764,910	15,921,747	14,794,663
Vehicles—						
Trucks	No.	1,718	1,785	2,082	2,401	2,298
Tractors	"	797	848	1,037	1,117	1,063
Semi-trailers	"	867	898	1,167	1,212	1,168
Trailers	"	26	39	51	145	81

Passenger Buses.*—The operations of companies predominantly engaged in passenger bus service are summarized in Table **11.** Data refer to the for-hire segment of the industry. Only firms engaged in intercity and rural operations and having an annual gross revenue of $6,000 or over are covered. Operators predominantly involved in the provision of school bus service are not included nor are airport servicing and urban transit bus operators.

* Statistics are given in more detail in DBS annual report *Passenger Bus Statistics* (Catalogue No. 53-215).

11.—Summary Statistics of Intercity and Rural Passenger Bus Companies, 1964-68

NOTE.—Only carriers with annual gross revenue of $6,000 or over are included.

Item		1964	1965	1966	1967	1968
Carriers Reporting	No.	165	162	158	157	159
Property Account—Fixed Assets	$	75,007,987	73,864,251	78,653,611	89,301,064	94,031,132
Revenues	$	63,170,601	68,841,256	80,429,354	96,017,923	92,864,788
Regular Passenger Service—						
Intercity and rural	$	47,945,483	52,304,349	60,769,147	71,417,039	67,809,886
Urban and suburban	$	752,507	891,364	1,063,730	881,959	1,268,847
Chartered service	$	7,498,220	8,068,519	10,101,725	14,126,041	12,846,385
Other transportation revenue	$	6,974,391	7,577,024	8,494,752	9,592,884	10,939,670
Operating Expenses	$	57,782,444	61,737,884	70,170,546	82,381,236	83,746,881
Maintenance	$	11,270,499	11,573,622	12,287,006	14,329,270	15,176,371
Wages and bonuses of drivers and helpers	$	14,875,560	16,343,963	19,522,951	23,326,326	22,608,114
Other transportation expenses	$	11,512,062	12,851,723	14,728,273	17,699,664	17,935,046
Operating taxes and licences	$	4,658,792	4,573,880	5,254,826	6,286,545	6,514,764
Other operating expenses	$	15,465,531	16,394,696	18,377,490	20,739,431	21,512,586
Net Operating Revenues	$	5,388,157	7,103,372	10,258,808	13,636,687	9,117,907

—Summary Statistics of Intercity and Rural Passenger Bus Companies, 1964-68—concluded

Item		1964	1965	1966	1967	1968
ffic and Employees—						
assengers—						
Regular Routes—						
Intercity and rural	No.	46,646,418	45,606,246	49,840,586	51,977,079	48,697,347
Urban and suburban	"	4,571,884	4,570,831	4,759,006	4,011,541	4,739,623
Special and chartered service	"	6,121,076	6,504,753	9,053,905	11,133,244	11,291,166
us Miles—						
Regular Routes—						
Intercity and rural	No.	94,124,250	90,704,870	107,560,495	122,270,117	112,384,646
Urban and suburban	"	1,712,294	2,062,317	2,783,341	2,335,233	2,604,433
Special and chartered service	"	12,009,902	12,203,870	14,749,766	18,351,327	17,103,383
asoline consumed	gal.	3,703,651	3,677,222	3,551,898	3,332,326	3,141,615
iesel oil consumed	"	9,312,916	11,040,793	13,204,813	16,531,222	15,043,087
mployees—						
Average employed during year	No.	4,650	4,738	5,192	5,651	5,695
Total salaries and wages	$	23,984,134	25,854,643	30,512,856	36,149,606	36,588,298
Working proprietors	No.	48	53	46	35	38
ithdrawals of working proprietors	$	117,859	152,718	197,050	133,872	126,779
uipment—						
uses	No.	2,513	2,622	2,746	2,906	2,924
Gasoline	"	*1,089*	*1,086*	*1,100*	*1,087*	*1,076*
Diesel	"	*1,424*	*1,536*	*1,646*	*1,819*	*1,848*

Urban Transit Systems.—The collection of statistical information on urban transit stems has been extensively reorganized in recent years because of major changes made the types of vehicles used for mass passenger movement in urban centres. The current ies, which was started in 1956, includes operations of motor buses, trolley coaches, eetcars and subway cars carrying passengers in urban and suburban service.

12.—Summary Statistics of Urban Transit Systems, 1964-68

Item		1964	1965	1966	1967	1968
senger Fares[1]	**No.**	**994,239,184**	**985,164,840**	**1,036,423,243**	**1,084,790,597**	**1,055,636,787**
otor bus	"	690,881,295	678,017,653	706,647,281	701,373,163	693,882,668
rolley coach	"	133,197,665	130,414,263	116,005,602	117,036,832	113,794,199
treetcar	"	122,023,961	124,787,132	96,826,090	86,038,913	76,513,018
ubway car	"	38,055,729	41,373,620	104,754,424	166,767,061	160,670,290
hartered	"	9,662,154	10,332,687	9,852,174	11,417,371	9,069,626
ntercity and rural services (all types of vehicles)	"	418,380	239,485	2,337,672	2,157,257	1,706,986
icle-Miles Run	**No.**	**212,804,909**	**213,779,503**	**240,317,620**	**254,012,565**	**257,674,340**
otor bus	"	150,113,461	152,806,059	166,857,144	168,948,801	174,305,754
rolley coach	"	28,748,408	27,654,912	24,545,355	24,597,530	24,231,728
treetcar	"	20,118,497	19,912,282	14,612,818	13,792,939	12,741,032
ubway car	"	9,474,168	9,644,797	30,309,257	40,630,393	41,418,888
hartered	"	3,628,719	3,495,176	3,502,820	5,510,258	4,435,569
ntercity and rural services (all types of vehicles)	"	721,656	266,277	490,226	532,644	541,369
el Consumed—						
iesel oil	gal.	20,713,770	23,149,602	26,217,292	28,820,610	29,513,200
asoline	"	8,874,984	7,565,509	6,544,005	5,857,092	4,528,850
iquid petroleum gases	"	277,333	256,069	246,863	189,366	158,386
senger Vehicles in Service	**No.**	**7,641**	**7,939**	**8,483**	**8,737**	**8,649**
otor bus	"	5,609	5,774	6,103	6,384	6,436
rolley coach	"	1,122	1,096	989	975	967
treetcar	"	740	735	688	675	543
ubway car	"	170	334	703	703	703

[1] Initial revenue passenger fares, excluding transfers

12.—Summary Statistics of Urban Transit Systems, 1964-68—concluded

Item		1964	1965	1966	1967	1968
Finances—						
Total assets[1]	$	262,078,164	288,415,768	318,872,629	335,141,232	340,41
Long-term debt[1]	$	145,993,895	161,536,125	177,127,897	182,564,138	182,67
Capital stock and surplus[1]	$	80,824,236	82,276,931	87,980,805	89,744,518	92,39
Operating revenues	$	151,851,962	164,054,532	182,551,307	217,835,451	222,56
Operating expenses	$	151,389,907	166,745,551	186,873,252	220,189,545	230,05
Ratio of expenses to revenues	p.c.	99.70	101.64	102.37	101.08	1
Employees	No.	17,961	18,645	19,694	20,814	2
Salaries and wages	$	95,759,397	106,345,817	121,270,890	135,387,582	158,96

[1] Excludes British Columbia Hydro and Power Authority.

There are two subway systems in operation in Canada; the Toronto subway officially opened on Mar. 30, 1954 and the Montreal subway went into public use on 17, 1966.

Motor Vehicle Traffic Accidents.—There were 484,436 motor vehicle traffic a dents reported in 1968 compared with 452,759 in the previous year. Deaths from s accidents numbered 5,429 in 1967 and 5,318 in 1968 as against 3,118 in 1958. Statis for 1968, reported by place of occurrence, are given by province in Table **13** but it sh be noted that, although motorists are required by law to report accidents, complete statis of these accidents are not available for all provinces.

13.—Motor Vehicle Traffic Accidents, by Province, 1968

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Ca
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	N
Accidents Reported	**7,083**	**1,931**	**14,179**	**11,005**	**147,749**	**155,127**	**19,526**	**21,987**	**46,616**	**58,300**	**933**	**484**
Fatal	61	33	206	186	1,397	1,346	160	211	351	460	11	4
Non-fatal	1,647	485	2,688	2,607	29,953	47,719	5,839	4,340	6,613	13,299	216	115
Property damage[1]	5,375	1,413	11,285	8,212	116,399	106,062	13,527	17,436	39,652	44,541	706	364
Persons Killed	**74**	**39**	**237**	**232**	**1,672**	**1,586**	**199**	**264**	**430**	**574**	**11**	**5**
Drivers	20	13	93	68	563	643	81	127	161	240	3	2
Passengers	27	15	67	83	491	491	71	95	155	206	4	1
Pedestrians	26	9	67	66	463	336	38	32	59	98	4	1
Bicyclists	—	1	5	12	69	47	4	3	4	11	—	
Motorcyclists and passengers	—	1	4	3	86	65	4	4	16	19	—	
Others	1	—	1	—	—	4	1	3	35	—	—	
Persons Injured	**2,490**	**789**	**3,797**	**3,978**	**44,510**	**71,520**	**8,527**	**7,106**	**10,467**	**20,371**	**346**	**173**
Drivers	725	349	1,378	1,581	12,887	30,968	3,880	3,088	4,338	8,363	124	67
Passengers	1,018	324	1,491	1,688	18,806	28,315	3,512	3,383	4,549	9,520	172	72
Pedestrians	630	80	626	470	7,992	7,302	671	429	854	1,408	27	20
Bicyclists	51	13	99	102	2,089	1,736	157	101	164	363	2	4
Motorcyclists and passengers	51	22	195	129	2,736	3,085	284	80	287	697	20	7
Others	15	1	8	8	—	114	23	25	275	20	1	
Total Property Damage[2] $'000	**3,903**	**953**	**7,266**	**6,563**	**83,224**	**89,634**	**8,863**	**12,656**	**24,466**	**33,281**	**708**	**271**

[1] All reported accidents are those resulting in property damage estimated at $100 or over. [2] Estima

PART III.—WATER TRANSPORT*

The Canada Shipping Act.—Legislation regarding shipping is consolidated in the ıada Shipping Act (RSC 1952, c. 29). Under the Act and its amendments, the Parlia- ıt of Canada accepts full responsibility for the regulation of Canadian shipping.

Section 1.—Shipping Facilities and Traffic

Subsection 1.—Shipping

All Canadian waterways including canals, lakes and rivers are open on equal terms, ept in the case of the coasting trade, to the shipping of all countries of the world so that ıadian shipping must compete with foreign flag shipping.

Within the region from approximately Havre St. Pierre on the St. Lawrence River tream to the head of the Great Lakes, the carriage of goods or passengers from one ıadian port to another Canadian port, commonly known as the coasting trade, is re- cted to ships registered in Canada. Elsewhere in Canada, the coasting trade is open ll Commonwealth ships.

Canadian Registry.—Under Part I of the Canada Shipping Act, ships in excess of ons net register and pleasure yachts in excess of 20 tons net are required to be registered; s of lower tonnage may be registered voluntarily, otherwise they are required to be rated under a Vessel Licence if powered by a motor of 10 hp. or more. Sect. 6 of the restricts ownership to British subjects or bodies corporate incorporated under the law country of the Commonwealth or of the Republic of Ireland and having their principal e of business in those countries. Under the British Commonwealth Merchant Shipping eement, all Commonwealth ships are given the general designation 'British Ship', and ip that should be but is not registered is not entitled to the privileges accorded to ish ships. Ships in the planning stage or in course of construction may be recorded re registry by a Registrar of Shipping at one of the 75 Ports of Registry in Canada.

* Information and statistics dealing with this subject have been supplied as follows: aids to navigation, canals, ours, administrative services and marine services by the Ministry of Transport and the National Harbours d; the St. Lawrence Seaway by the St. Lawrence Seaway Authority; canal traffic and statistics of shipping by Transportation and Public Utilities Division, Dominion Bureau of Statistics; and shipping subsidies by the ctor of Subsidized Steamship Services, Water Transport Committee, Canadian Transport Commission.

1.—Vessels on the Canadian Shipping Registry, by Province, as at Dec. 31, 1967-69

Province or Territory	1967		1968		1969	
	Ships	Gross Tonnage	Ships	Gross Tonnage	Ships	Gross Tonnage
	No.	No.	No.	No.	No.	No.
oundland	1,040	163,044	1,091	159,707	1,063	156,373
e Edward Island	1,126	24,721	1,146	38,044	1,197	39,079
a Scotia	7,579	201,696	7,560	189,722	7,042	193,569
Brunswick	2,703	151,014	2,720	152,561	2,790	161,380
ec	3,055	1,091,011	3,059	1,066,489	3,034	1,023,670
io	2,579	1,100,931	2,641	1,103,683	2,669	1,110,023
toba	109	19,465	109	55,366	112	57,059
atchewan	1	108	2	123	2	123
ta	15	873	15	873	25	2,423
sh Columbia	8,237	914,096	8,614	945,990	9,131	1,049,224
n Territory	7	1,470	7	1,470	7	1,470
Totals	**26,451**	**3,668,429**	**26,964**	**3,714,028**	**27,072**	**3,794,393**

Shipping Traffic.—Table 2 shows the number and tonnage of all vessels (ex those of less than 15 registered net tons, naval vessels and, for 1962-68, fishing ves entering Canadian customs and non-customs ports.

2.—Vessels Entered at Canadian Ports, 1959-68

Year	In International Seaborne Shipping		In Coastwise Shipping		Totals	
	Vessels	Registered Net Tons	Vessels	Registered Net Tons	Vessels	Registe Net T
	No.	No.	No.	No.	No.	No.
1959	33,251	67,526,464	110,702	85,536,408	143,953	153,06
1960	33,397	74,805,002	120,125	88,493,116	153,522	163,29
1961	31,832	77,140,524	115,339	91,157,708	147,171	168,29
1962	30,269	81,942,501	112,325	87,767,018	142,594	169,70
1963	29,169	87,385,238	107,232	87,257,470	136,401	174,64
1964	29,809	92,799,912	105,186	91,007,726	134,995	183,80
1965	28,792	98,128,231	99,153	89,363,142	127,945	187,49
1966	28,871	99,852,760	102,400	96,648,426	131,271	196,50
1967	27,025	97,488,757	95,999	88,639,451	123,024	186,12
1968	26,761	102,055,092	89,154	90,767,420	115,915	192,82

3.—Cargoes Loaded and Unloaded at Principal Canadian Ports from Vessels in Internati Seaborne and Coastwise Shipping, by Province, 1968 with Totals for 1967

NOTE.—Only ports handling over 300,000 tons are listed.

Province and Port	International		Coastwise		Total 1968	Tot 196
	Loaded	Unloaded	Loaded	Unloaded		
	tons	tons	tons	tons	tons	ton
Newfoundland	**1,652,061**	**1,517,520**	**1,549,483**	**2,030,348**	**6,749,412**	**5,41**
Holyrood	530	643,864	448,740	152	1,093,286	69
Corner Brook	352,974	208,417	42,593	406,964	1,010,948	90
St. John's	11,312	278,418	98,587	487,595	875,912	89
Bell Island	271,723	—	250,533	4,809	527,065	2
Botwood	359,567	48,194	262	113,595	521,618	63
Port aux Basques	363	95	45,756	408,845	455,059	38
Stephenville	365,069	270	52,166	20,369	437,874	40
Prince Edward Island	**67,103**	**140,099**	**249,096**	**396,475**	**852,773**	**80**
Charlottetown	20,529	140,099	239,272	367,397	767,297	66
Nova Scotia	**5,310,807**	**6,108,889**	**4,006,005**	**2,011,240**	**17,436,941**	**15,70**
Halifax	2,191,929	4,934,386	2,049,174	475,194	9,650,683	9,06
Sydney	139,319	1,083,752	980,380	1,101,942	3,305,393	2,34
Hantsport	1,752,533	1,873	—	—	1,754,406	1,69
Port Hawkesbury	526,114	64,379	59,105	40,973	690,571	63
North Sydney	9,503	126	431,655	53,959	495,243	40
Little Narrows	200,269	—	263,149	—	463,418	33
New Brunswick	**1,938,252**	**3,472,411**	**976,943**	**1,080,871**	**7,468,477**	**7,41**
Saint John	1,068,114	3,076,595	931,012	400,172	5,475,893	5,58
Dalhousie	631,584	57,880	—	4,600	694,064	68
Quebec	**43,099,141**	**15,985,282**	**13,123,492**	**14,359,957**	**86,567,872**	**80,54**
Sept Îles-Pointe Noire	20,782,138	692,422	3,878,515	593,913	25,946,988	22,66
Montreal	3,418,268	5,777,673	5,202,313	2,975,479	17,373,733	18,55
Port Cartier	10,990,733	742,168	30,712	844,271	12,607,884	9,54
Quebec	2,003,512	1,545,529	136,311	2,979,595	6,664,947	7,04
Baie Comeau	2,137,075	1,147,720	208,608	1,212,663	4,706,066	4,47
Sorel	1,395,868	820,001	4,317	2,314,827	4,535,013	4,17
Port Alfred	438,658	3,440,019	27,088	483,749	4,389,514	4,20

—Cargoes Loaded and Unloaded at Principal Canadian Ports from Vessels in International Seaborne and Coastwise Shipping, by Province, 1968 with Totals for 1967—concluded

Province and Port	International		Coastwise		Total 1968	Total 1967
	Loaded	Unloaded	Loaded	Unloaded		
	tons	tons	tons	tons	tons	tons
uebec—concluded						
Trois-Rivières	1,080,964	888,784	28,881	1,100,917	3,099,546	3,056,456
Havre St. Pierre	62,820	—	1,748,456	19,930	1,831,206	1,804,625
Contrecoeur	410,170	746,674	104,126	84,625	1,345,595	1,227,677
Forestville	—	—	848,374	33,752	882,126	723,962
Chicoutimi	3,379	64,929	4,279	572,335	644,922	579,922
Rimouski	10,257	35,881	50,038	418,709	514,885	549,104
ntario	**9,604,706**	**22,626,893**	**16,489,285**	**16,517,754**	**65,238,638**	**63,038,430**
Thunder Bay	3,726,301	241,131	8,457,580	1,037,939	13,462,951	15,270,424
Hamilton	257,812	7,150,808	489,091	4,100,713	11,998,424	10,593,080
Toronto	205,657	3,305,040	154,419	2,044,936	5,710,052	5,758,745
Sault Ste Marie	263,349	3,095,638	187,475	1,698,826	5,245,288	4,604,223
Sarnia	209,807	1,324,519	2,291,739	433,590	4,259,655	3,912,345
Port Credit	—	3,026,029	267,244	225,927	3,519,200	3,245,609
Windsor-Walkerville	595,138	1,412,623	679,572	514,489	3,201,822	2,950,381
Port Colborne	1,380,705	207,323	221,833	558,516	2,368,377	2,272,877
Clarkson	—	5,525	415,514	1,613,729	2,034,768	1,647,611
Colborne	—	—	1,433,962	—	1,433,962	881,734
Goderich	423,340	46,094	539,294	317,492	1,326,220	1,408,691
Picton	793,292	98,077	288,771	12,230	1,192,370	1,134,508
Little Current	570,999	479,119	14,061	51,131	1,115,310	1,041,986
Prescott	9,912	150,805	132,092	436,659	729,468	832,191
Depot Harbour	728,979	—	—	—	728,979	722,693
Thorold	126,333	300,319	267	254,300	681,219	667,099
Kingston	29,738	140,862	15,464	340,786	526,850	480,508
Parry Sound	—	14,904	—	413,150	428,054	396,691
Midland	—	29,735	39,039	353,212	421,986	540,424
Port Stanley	—	98,727	13,258	253,994	365,979	335,828
Michipicoten Harbour	122,849	1,590	192,258	45,110	361,807	305,559
Owen Sound	—	39,196	39,010	268,701	346,907	372,005
Oshawa	468	198,397	—	142,871	341,736	273,462
anitoba	**668,221**	**43,941**	**14,133**	**93**	**726,388**	**667,771**
Churchill	668,221	43,941	14,133	93	726,388	667,771
ritish Columbia	**24,371,015**	**4,224,703**	**19,721,105**	**19,705,407**	**68,022,230**	**66,467,965**
Vancouver	12,955,584	2,400,032	5,483,821	4,951,621	25,791,058	24,084,527
New Westminster	1,467,702	215,501	1,946,003	1,435,216	5,064,422	5,266,770
Duncan Bay–Campbell River	490,366	89,791	285,151	1,980,306	2,845,614	2,615,637
Nanaimo	932,247	59,072	224,560	1,502,059	2,717,938	2,709,471
Victoria	1,310,555	113,125	366,200	656,719	2,446,599	2,544,878
Crofton	755,662	51,660	62,937	1,067,683	1,937,942	1,644,998
Britannia Beach	76,570	—	1,157,167	677,073	1,910,810	2,223,299
Prince Rupert	723,984	401,787	157,264	408,340	1,691,375	1,457,815
Powell River	261,102	73,472	387,052	708,618	1,430,244	1,547,062
Port Alberni	897,227	33,719	30,633	434,314	1,395,893	1,345,288
Ladysmith	192,572	—	884,226	30,588	1,107,386	992,232
Kitimat	134,701	575,541	106,253	83,226	899,721	773,107
Port Mellon	28,427	1,624	39,645	821,057	890,753	1,117,976
North Arm Fraser River	1,800	—	119,172	712,724	833,696	845,288
Vananda	377,310	—	393,061	5,883	776,254	627,548
Chemainus	425,959	13,747	108,807	121,696	670,209	764,062
Blubber Bay	523,194	—	33,673	477	557,344	685,592
Texada	532,376	—	12,498	5,152	550,026	695,168
Beaver Cove	—	—	535,322	13,589	548,911	491,777
Andy's Bay	—	—	10,641	510,394	521,035	536,194
Teakerne Arm	—	—	353,301	65,978	419,279	698,117
Bamberton	1,488	—	319,380	30,984	351,852	418,773
Ocean Falls	30,206	40,231	150,610	112,130	333,177	645,854
Squamish	10,232	27,512	230,263	60,650	328,657	494,361
orthwest Territories	—	**10,131**	**1,174**	**53,147**	**64,452**	**60,052**
Totals	**86,711,306**	**54,129,869**	**56,130,716**	**56,155,292**	**253,127,183**	**240,121,878**

The freight movement through a large port takes a number of different forms. The include cargoes for or from foreign countries and cargoes loaded and unloaded in coastwi shipping, i.e., domestic freight moving between Canadian points. There is, as well, t in-transit movement in vessels that pass through the harbour without loading or unloadi and the movement from one point to another within the harbour, which in many por amounts to a large volume.

Shipping statistics, which cover traffic in and out of both customs and non-custo ports, do not include freight in transit or freight moved from one point to another with the harbour. Table 4 shows the principal commodities loaded and unloaded in foreign a coastwise shipping at the 12 ports handling the largest cargo volumes in 1968. These por handled 66.8 p.c. of all Canada's international shipping and 45.0 p.c. of the coastwise trad The specific commodities shown are those transported in volume and often in bulk for

4.—Principal Commodities in Water-Borne Cargo Loaded and Unloaded at Ports Handli the Largest Tonnages in 1968

NOTE.—Only commodities totalling over 50,000 tons are listed.

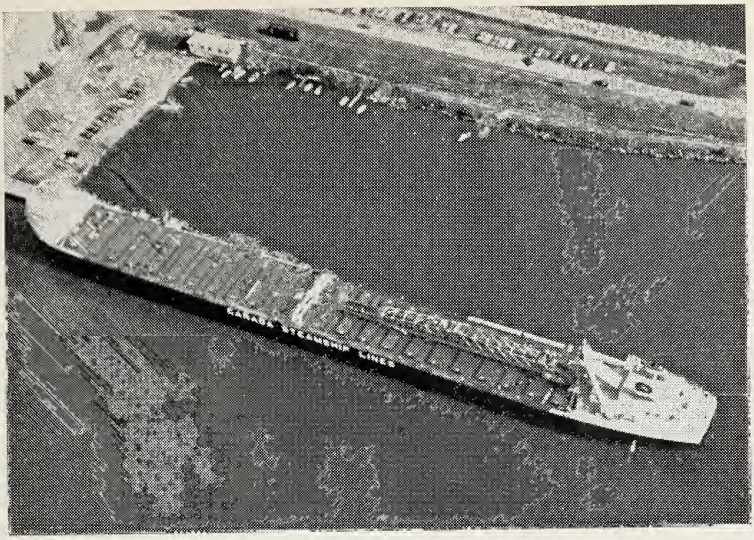
Port and Commodity	International		Coastwise		Total
	Loaded	Unloaded	Loaded	Unloaded	
	tons	tons	tons	tons	tons
Montreal	**3,418,268**	**5,777,673**	**5,202,313**	**2,975,479**	**17,373,**
Wheat	1,121,593	30,039	—	1,642,917	2,794,
Fuel oil	126,604	1,734,863	3,012,714	65,412	4,939,
Gasoline	—	285,022	1,401,777	—	1,686,
Crude petroleum	—	689,759	—	—	689,
Salt	26	105,079	5,840	350,189	461,
Coal, bituminous	55	369,521	10	—	369,
Corn	34,133	304,293	3,743	3,798	345,
Gypsum	77	—	21	312,258	312,
Raw sugar	154	306,221	—	—	306,
Plate and sheet steel	43,422	160,427	15,561	36,443	255,
Asbestos	216,127	4,767	17	300	221,
Wheat flour	195,711	30	5,094	3,665	204,
Lubricating oil and grease	978	56,280	137,821	8,974	204,
Structural shapes	19,751	143,778	21,947	1,801	187,
Barley	30	—	—	180,987	181,
Cement	277	15,881	122,002	—	138,
Petroleum coal products, *n.e.s.*	9,567	3,471	93,194	26,011	132,
Copper and alloys	123,118	1,332	704	2,773	127,
Machinery, *n.e.s.*	28,033	51,874	37,811	6,427	124,
Oats	15,044	—	—	98,625	113,
Organic chemicals, *n.e.s.*	43,625	65,556	945	30	110,
Soybeans	50,902	21,098	—	34,284	106,
Miscellaneous food preparations, *n.e.s.*	15,332	10,635	62,959	9,107	98,
Molasses, crude	—	95,374	—	—	95,
Passenger auto and chassis	16,823	62,884	466	1,301	81,
Nickel-copper ore	81,087	341	—	—	81,
Personal and household goods	10,347	41,446	23,670	487	75,
Crude non-metallic minerals, *n.e.s.*	62,623	4,705	44	—	67,
Other commodities not listed	1,202,829	1,212,997	255,973	189,690	2,861,
Vancouver	**12,955,584**	**2,400,032**	**5,483,821**	**4,951,621**	**25,791,**
Wheat	4,343,192	112	22,635	—	4,365,
Pulpwood	286,159	—	2,343,285	413,113	3,042,
Sand and gravel	14,500	463,360	28,265	1,835,455	2,341,
Lumber and timber	1,281,188	19,432	153,960	177,465	1,632,
Potash	1,617,685	197	852	310	1,619,
Logs	156,048	4,374	150,988	1,193,962	1,505,
Fuel oil	95,336	176,977	1,018,977	33	1,291,
Coal, bituminous	1,091,869	5	142	—	1,092,
Sulphur in ores	1,037,518	—	21,907	—	1,059,
Pulp	506,786	36	5,000	343,837	855,
Hogged fuel	52,900	—	694,520	11,100	758,
Barley	542,890	—	1	—	542,
Salt	—	321,559	93,592	508	415,
Gasoline	23,575	534	374,203	298	398,
Limestone	44,224	—	51	340,491	384,

—Principal Commodities in Water-Borne Cargo Loaded and Unloaded at Ports Handling the Largest Tonnages in 1968—continued

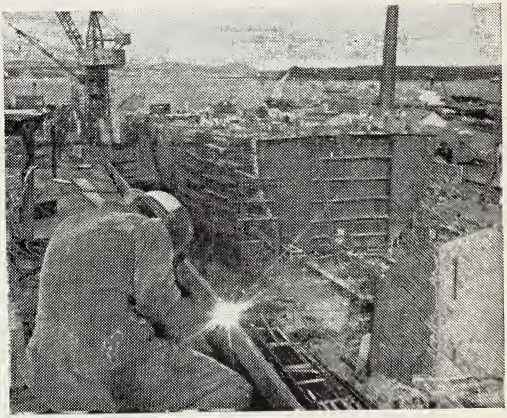
Port and Commodity	International		Coastwise		Total
	Loaded	Unloaded	Loaded	Unloaded	
	tons	tons	tons	tons	tons
ancouver—concluded					
Phosphate rock	—	383,092	—	—	383,092
Newsprint	27,181	—	59	355,141	382,381
Rapeseed	330,991	—	—	—	330,991
Inorganic chemicals	3,746	55,315	195,370	43	254,474
Copper ore and concentrates	208,096	23,990	—	3,100	235,186
Asbestos	77,703	125,238	507	—	203,448
Petroleum coal products	174,193	118	6,858	—	181,169
Cement	18,451	5,846	7,114	121,575	152,986
Flaxseed	145,279	—	—	—	145,279
Raw sugar	1	92,387	—	—	92,388
Rye	79,607	—	—	—	79,607
Fertilizers	63,757	3,866	6,321	39	73,983
Structural shapes	11,603	52,324	8,884	449	73,260
Miscellaneous food preparations, *n.e.s.*	14,500	20,186	35,909	18	70,613
Organic chemicals	7,748	7,809	54,857	65	70,479
Plate and sheet steel	59	68,302	463	400	69,224
Machinery, *n.e.s.*	3,348	23,853	30,423	9,540	67,164
Veneer and plywood	28,433	30,220	2,171	184	61,008
Other commodities not listed	667,018	520,900	226,507	144,495	1,558,920
pt Îles-Pointe Noire	**20,782,138**	**692,422**	**3,878,515**	**593,913**	**25,946,988**
Iron ore and concentrates	20,777,996	—	3,719,866	—	24,497,862
Fuel oil	—	485,505	2,829	205,580	693,914
Bentonite	—	163,257	—	—	163,257
Other commodities not listed	4,142	43,660	155,820	388,333	591,955
hunder Bay	**3,726,301**	**241,131**	**8,457,580**	**1,037,939**	**13,462,951**
Wheat	263,819	—	5,429,740	—	5,693,559
Iron ore and concentrates	2,655,972	—	1,687,204	—	4,343,176
Barley	150,657	—	576,255	—	726,912
Oats	17,772	—	328,102	—	345,874
Pulpwood	63,800	—	37,500	157,500	258,800
Fuel oil	—	—	—	186,587	186,587
Coal, bituminous	—	169,817	—	—	169,817
Flaxseed	92,705	—	67,368	—	160,073
Newsprint	149,808	—	1,998	—	151,806
Gasoline	—	—	—	139,434	139,434
Plate and sheet steel	—	342	87	126,751	127,180
Hulls, screenings and chaff	81,650	—	43,908	—	125,558
Potash	113,885	—	—	—	113,885
Salt	—	—	—	105,280	105,280
Wheat flour	26,975	—	70,695	170	97,840
Malt and malt flour	—	—	—	72,415	72,415
Rye	58,604	—	27,648	—	86,252
Other commodities not listed	50,654	70,972	187,075	249,802	558,503
ort Cartier	**10,990,733**	**742,168**	**30,712**	**844,271**	**12,607,884**
Iron ore concentrates	9,620,879	—	29,792	—	9,650,671
Wheat	1,162,461	414,157	—	811,040	2,387,658
Fuel oil	—	86,068	—	11,110	97,178
Other commodities not listed	207,393	241,943	920	22,121	472,377
amilton	**257,812**	**7,150,808**	**489,091**	**4,100,713**	**11,998,424**
Iron ore concentrates	—	2,371,395	—	3,538,441	5,909,836
Coal, bituminous	—	4,143,500	—	—	4,143,500
Fuel oil	—	218,256	—	302,246	520,502
Plate and sheet steel	78,755	12,935	199,540	2,782	294,012
Wheat	—	—	73,488	104,732	178,220
Soybeans	56	124,806	—	—	124,862
Other commodities not listed	179,001	279,916	216,063	152,512	827,492
alifax	**2,191,929**	**4,934,386**	**2,049,174**	**475,194**	**9,650,683**
Crude petroleum	—	3,146,052	—	—	3,146,052
Fuel oil	37,001	1,404,075	1,419,034	113,627	2,973,737
Gypsum	1,542,409	—	6,831	—	1,549,240

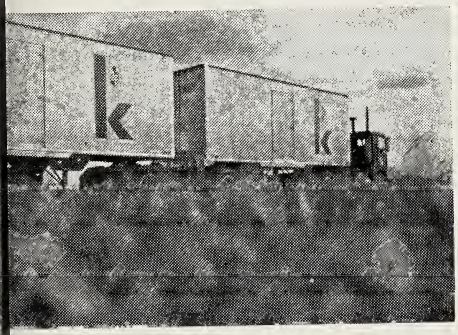
4.—Principal Commodities in Water-Borne Cargo Loaded and Unloaded at Ports Handlin the Largest Tonnages in 1968—concluded

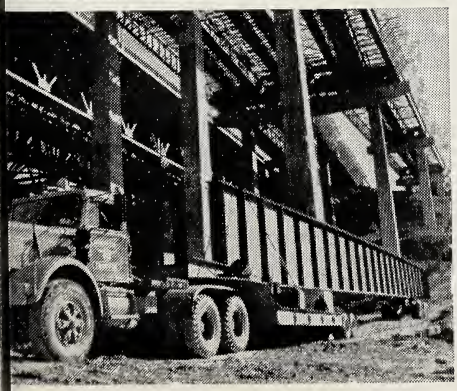
Port and Commodity	International		Coastwise		Total
	Loaded	Unloaded	Loaded	Unloaded	
	tons	tons	tons	tons	tons
Halifax—concluded					
Gasoline	368	25,327	586,149	107,069	718,91
Wheat	218,482	—	—	158,126	376,60
Wheat flour	72,241	2	2,543	—	74,78
Other commodities not listed	321,428	358,930	34,617	96,372	811,34
Quebec	**2,003,512**	**1,545,529**	**136,311**	**2,979,595**	**6,664,94**
Fuel oil	—	874,597	88,372	622,193	1,585,16
Wheat	598,275	121,895	—	521,520	1,241,69
Pulpwood	6,719	—	—	903,178	909,89
Gasoline	—	94,307	20,146	594,993	709,44
Zinc ore concentrates	482,297	—	—	—	482,29
Corn	124,268	281,429	15	—	405,71
Newsprint	311,204	—	—	—	311,20
Barley	6,905	7,600	—	153,362	167,86
Asbestos	161,458	—	—	—	161,45
Oats	—	—	249	62,888	63,13
Coal, bituminous	—	12,173	1	46,709	58,88
Other commodities not listed	312,386	153,528	27,528	74,752	568,19
Toronto	**205,657**	**3,305,040**	**154,419**	**2,044,936**	**5,710,05**
Coal, bituminous	153	2,018,590	—	602,145	2,620,88
Fuel oil	36	137,734	80,492	454,829	673,09
Cement	54	670	—	360,517	361,24
Soybeans	800	247,999	—	24,134	272,93
Salt	—	72,067	—	195,515	267,58
Wheat	—	—	13,334	155,819	169,15
Raw sugar	—	142,712	—	—	142,71
Gasoline	—	—	60,135	73,789	133,92
Soybean oil, meal and cake	57,537	—	—	—	57,53
Other commodities not listed	147,077	685,268	458	178,188	1,010,99
Saint John	**1,068,114**	**3,076,595**	**931,012**	**400,172**	**5,475,89**
Crude petroleum	—	2,047,603	—	—	2,047,60
Fuel oil	21,730	540,785	630,566	203,682	1,396,76
Gasoline	—	—	261,529	147,366	408,89
Wheat	262,343	—	—	—	262,34
Raw sugar	—	250,518	—	—	250,51
Wheat flour	167,491	—	5,374	—	172,86
Newsprint	101,719	—	—	—	101,71
Other commodities not listed	514,831	237,689	33,543	49,124	835,18
Sault Ste Marie	**263,349**	**3,095,638**	**187,475**	**1,698,826**	**5,245,28**
Coal, bituminous	—	2,453,438	—	—	2,453,43
Iron ore and concentrates	—	122,342	—	1,252,471	1,374,81
Limestone	—	487,964	—	—	487,96
Fuel oil	—	8,333	2,748	292,251	303,33
Plate and sheet steel	42,568	—	88,565	517	131,65
Gasoline	—	—	—	117,976	117,97
Pig iron	114,962	—	—	—	114,96
Primary iron and steel, *n.e.s.*	72,398	—	13,670	—	86,06
Other commodities not listed	33,421	23,561	82,492	35,611	175,08
Baie Comeau	**2,137,075**	**1,147,720**	**208,608**	**1,212,663**	**4,706,06**
Wheat	1,121,681	295,849	765	903,819	2,322,11
Corn	366,334	417,556	—	—	783,89
Newsprint	335,141	—	—	—	335,14
Pulpwood	99,921	—	176,645	1,002	277,56
Fuel oil	—	110,293	—	81,367	191,66
Soybeans	88,563	88,566	—	—	177,12
Alumina and bauxite ores	—	118,853	—	—	118,85
Cement	—	15	—	79,906	79,92
Aluminum	52,993	125	24,426	50	77,59
Other commodities not listed	72,442	116,463	6,772	146,519	342,19

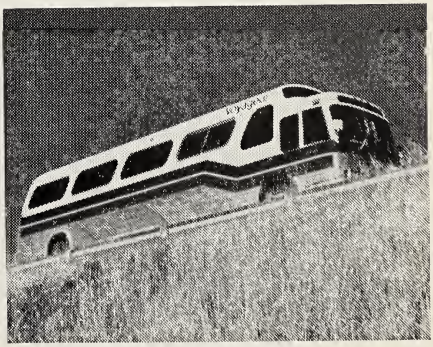


sport companies, facing increasing competition in present-day demand for fast and efficient move- mmodities and people, have become multi-transport ction operations. Canada Steamship Lines, for a mover by water and by land. It operates a large of bulk carriers and fast package freighters built shipyards, a trucking fleet with heavy-haulage ning out in every direction across the continent, s services moving thousands of people daily, and all the necessary terminal facilities.









Subsection 2.—Harbours

Water transportation cannot be studied with any degree of completeness with taking into consideration the co-ordination of land and water transportation at many the ports. Facilities provided to enable interchange movements include the necess docks and wharves, some for passenger traffic but most of them for freight, warehouses handling of general cargo, and special equipment for bulk freight of all kinds. Facili may include cold storage warehouses, harbour railway and switching connections, gr elevators, coal bunkers, oil storage tanks and, in the chief harbours, vessel repair do

Nine of the principal harbours of Canada are administered by the National Harbo Board and 11 other major harbours are administered by Harbour Commissions, wh include municipal as well as Federal Government appointees. In addition, there some 300 public harbours under the direct supervision of the Ministry of Transport, admi stered under rules and regulations approved by the Governor General in Council. Harb masters are appointed by the Minister of Transport for these harbours, their remunerat being paid from fees levied on vessels, under the terms of the Canada Shipping Act.

Throughout the country there are several thousand wharves and breakwaters admi stered by the Ministry of Transport under the Government Harbours and Piers A These facilities are for the accommodation of cargo ships and commercial fishing cr and are under the general supervision of the Ministry of Transport District Marine Ager Wharfingers, whose remuneration is determined as a percentage of wharfage fees collect are appointed for the direct supervision of these public wharves and floats. The whar are designed to accommodate the smallest fishing or pleasure craft or the largest oce going vessels, according to local requirements. At many ports, in addition to pub harbour works operated by the administering authority, there are extensive dock a handling facilities owned by private companies including railway, lumber, pulp and pap coal, steel, iron ore, petroleum, grain, fish and other industries moving large volumes bulk materials.

In 1969, the harbours of Canada handled more than 245,609,000 tons of cargo 223,000 vessel arrivals and departures in international seaborne and coastwise shippi

National Harbours Board.—The National Harbours Board, a Crown corporati established in 1936, is charged with the administration and operation of the followi properties: port facilities such as wharves and piers, transit sheds, grain elevators, c storage warehouses, terminal railways, etc., at the harbours of St. John's (Nfld.), Halif Saint John (N.B.), Belledune (N.B.), Chicoutimi, Quebec, Trois-Rivières, Montre Churchill and Vancouver; grain elevators at Prescott and Port Colborne in Ontario; a the Jacques Cartier and Champlain Bridges at Montreal.

The installation of full container-handling facilities at several of the ports under NH administration highlighted 1969 activities. During the year 38,000 full containers pass through the Port of Montreal following the opening of the first full container terminal th in late 1968. Interim container services were also available at Halifax, Saint John, Que and Vancouver while work continued on the provision of permanent facilities at the fo ports to be in operation in 1970. The first outerport in the Americas, the Roberts Ba development at Vancouver, was completed and in operation in April 1970. This 50-ac facility for the bulk-handling of coal was created mainly from material dredged from t area and is connected with the British Columbia mainland by a three-mile causew

Facilities at the larger harbours are listed in Table **5**, and summary traffic statist for 1968 and 1969 in Table **6.**

5.—Facilities of the Larger Harbours Administered by the National Harbours Board, as at Dec. 31, 1969

NOTE.—The facilities at these ports include those under the control of other agencies as well as those of the onal Harbours Board.

Item	Halifax	Saint John	Quebec	Trois-Rivières	Montreal	Vancouver
mum depth of approach annel..... ft.	70	30	30	35	35	39
bour railway..... miles	104	64	26	5	61	78
, wharves, jetties, etc. No.	88	34	40	18	135	109
th of berthing..... ft.	35,445	24,931	23,500	9,188	74,000	40,632
sit-shed floor space.....sq. ft.	1,451,902	938,000	754,000	482,365	3,725,000	1,748,600
storage warehouse pacity.....cu. ft.	1,719,000	900,000	500,000	—	2,900,000	3,633,297
n Elevators— pacity..... bu.	5,152,500	3,000,000	8,000,000	9,300,000	22,262,000	21,775,500
ading rate.....bu. per hr.	102,000	150,000	60,000	55,000	728,000	280,000
ting crane capacity..... tons	80	65	80	—	365[1]	130
dock storage capacity "	—	—	250,000	400,000	175,000	110,000
ank storage capacity.... gal.	271,280,000	41,346,500	180,502,083	44,634,550	1,279,000,000	320,636,236

[1] Includes a St. Lawrence Seaway crane of 275-ton capacity.

The capital values of the fixed assets administered by the Board at Dec. 31, 1969, ounted to $404,558,351; this figure includes expenditure on all buildings, machinery and able plant improvements less deductions for depreciation, and therefore represents a approximation of the present value of the properties. The total amount advanced by Federal Government to the National Harbours Board for capital expenditure during 9 was $7,980,245, distributed as follows: Halifax, $2,279,000; Saint John (N.B.), $16,084; bec, $1,740,000; Churchill, $81,000; Vancouver (Roberts Bank), $1,993,167; and Van-ver (Burrard Inlet Crossing), $1,870,994.

.—Summary Traffic Statistics for Harbours Administered by the National Harbours Board, 1968 and 1969

Port or Elevator		Vessel Arrivals	Vessel Tonnage	Cargo Tonnage	Grain Elevator Deliveries
		No.	No.	No.	bu.
ohn's, Nfld	1968	1,908	1,979,683	789,178	...
	1969	1,964	1,992,937	879,793	...
fax	1968	3,245	6,498,523	9,938,916	10,437,281
	1969	2,995	6,713,657	10,553,997	15,572,825
John	1968	1,875	4,101,951	5,728,954	9,227,858
	1969	1,687	4,272,844	6,282,729	13,039,236
outimi	1968	146	310,918	659,530	...
	1969	126	278,942	641,772	...
ec	1968	2,286	6,568,000	6,796,275	47,178,218
	1969	2,406	6,537,000	7,439,871	54,027,672
-Rivières	1968	1,482	3,281,690	3,499,226	27,391,553
	1969	1,445	3,281,559	3,733,060	30,063,537
real	1968	5,657	22,289,839	20,270,698	93,032,215
	1969	5,309	21,995,112	20,538,174	86,771,535
ott	1968	...	...	...	10,428,735
	1969	...	...	...	10,345,937
Colborne	1968	...	...	...	4,666,835
	1969	...	...	...	3,630,173
chill	1968	76	309,538	752,303	22,974,446
	1969	86	282,577	720,044	22,305,084
ouver	1968	21,104	22,348,013	24,173,764	189,528,114
	1969	19,105	21,283,905	23,080,469	162,292,838
Totals	**1968**	**37,794**	**67,761,634**	**72,781,405**	**414,865,255**
	1969	**35,144**	**66,743,440**	**74,099,525**	**398,048,837**

Subsection 3.—Canals

The canals and canalized waters of Canada under the jurisdiction of the Mini of Transport, together with those under the jurisdiction of the St. Lawrence Sea Authority, comprise a series of waterways providing navigation for 1,875 miles inl from salt water.

Those included under the two classifications—Seaway canals and Ministry of Trans canals—are listed in Table 7 with their locations, lengths and lock complement. addition to these, the federal Department of Public Works administers the St. Andr Lock (length, width and draught, respectively, 215, 45 and 17 feet) on the Red Rive Selkirk, Man., and the lock at Poupore, Que. A few small locks are operated by provir authorities.

During 1969, 97,357,234 tons of freight and 19,710 vessels passed through the ca as compared with 108,274,370 tons of freight and 20,378 vessels during 1968. In addi to freight and passenger vessels, thousands of pleasure craft are locked through the can Vessels locking at Sault Ste Marie during 1969 carried 192,891 passengers as comp with 138,011 in 1968.

7.—Lengths of Channels and Dimensions of Locks under the Control of the St. Lawrence Seaway Authority or the Ministry of Transport

Name	Location	Length of Channel	Locks			
			No.	Minimum Dimensi		
				Length	Width	D
		miles		ft.	ft.	
Seaway Canals[1]						
Main Route—						
South Shore	Montreal to Caughnawaga	20	2	766	80	3
Beauharnois	Melocheville to Lake St. Francis	15	2	766	80	3
Iroquois	Iroquois Point	1	1	766	80	3
Welland	Port Weller, Lake Ontario, to Port Colborne, Lake Erie	27.60	8	859	80	3
Non-toll—						
Lachine (not through canal)	Montreal to Lachine	7.5	2	270	45	1
Sault Ste Marie	St. Mary's Rapids, Sault Ste Marie	1.38	1	900	60	1
Ministry of Transport Canals						
Atlantic Area—						
Canso Canal	Canso Causeway, N.S.	0.78	1	820	80	3
St. Peter's	St. Peter's Bay to Bras d'Or Lakes, Cape Breton, N.S.	0.50	1	300	47.4	1
Richelieu River—						
St. Ours	St. Ours, Que.	0.12	1	339	45	1
Chambly	Chambly to St. Jean, Que.	11.76	9	125.1	23.3	
Ottawa and Rideau Rivers—						
Ste. Anne	Junction of St. Lawrence and Ottawa Rivers	0.62	1	200	45	
Carillon	Carillon Rapids, Ottawa River	0.50	1	200	45	
Rideau	Ottawa to Kingston	123.53	47	134	33	
	Rideau Lake to Perth (Tay Branch)	6.12	2	134	33	

For footnote, see end of table.

—Lengths of Channels and Dimensions of Locks under the Control of the St. Lawrence Seaway Authority or the Ministry of Transport—concluded

Name	Location	Length of Channel	Locks			
			No.	Minimum Dimensions		
				Length	Width	Depth
		miles		ft.	ft.	ft.
Ministry of Transport Canals— concluded						
ake Ontario to Georgian Bay—						
Trent	Trenton to Peterborough lock, Peterborough	88.74	18	175	33	8[2]
	Peterborough lock to Big Chute	143.71	22	134	33	6
	Big Chute Marine Railway	—	—	—	—	4
	Big Chute to Port Severn	8.11	1	100	25	6
	Sturgeon Lake to Lindsay (Scugog Branch)	10.00	1	142	33	6
	Lindsay to Port Perry (Scugog Branch)	25.00	—	—	—	4.5
Murray	Isthmus of Murray, Bay of Quinte	7.53	—	—	—	8.5[3]

[1] Minimum depth of Seaway canals is 27 feet and minimum width 200 feet. Wiley-Dondero canal and two locks ear Massena, N.Y., are in United States territory; dimensions are approximately the same as those of Canadian cilities. [2] Notice must be given by vessels of more than six-foot draught. [3] With Lake Ontario at evation of 243 feet.

8.—Traffic through Canadian Canals, by Registry of Vessel, Navigation Seasons 1969-69

NOTE.—Figures include duplications where vessels pass through two or more canals.

Navigation Season	Canadian		United States		United Kingdom		Other	
	Vessels	Registered Tonnage	Vessels	Registered Tonnage	Vessels	Registered Tonnage	Vessels	Registered Tonnage
	No.	No.	No.	No.	No.	No.	No.	No.
60	19,816	28,963,294	5,046	3,660,931	1,303	3,971,587	3,464	9,455,739
61	17,332	32,531,256	3,307	2,515,262	1,845	6,294,753	3,496	10,065,901
62	13,836	31,677,612	3,524	4,045,470	1,938	6,679,909	3,538	11,017,809
63	13,821	38,040,238	3,106	4,016,111	1,637	6,932,454	3,247	10,248,060
64	14,256	40,025,355	2,906	5,461,310	2,043	9,494,484	3,950	13,176,847
65	12,959	42,704,703	2,827	3,966,615	2,399	10,852,520	5,171	14,963,462
66	15,151	53,019,538	2,553	3,971,446	1,470	6,270,454	4,292	16,875,582
67	12,894	49,093,644	2,902	4,935,462	1,350	5,506,251	3,900	15,141,400
68	13,084	52,826,261	2,305	4,274,677	1,170	4,962,991	3,819	17,321,245
69	12,324	50,864,524	2,503	1,719,253	1,179	4,824,414	3,704	17,199,095

9.—Freight Traffic through Canadian Canals, by Origin of Cargo, Navigation Seasons 1960-69

NOTE.—Figures include duplications where cargoes pass through two or more canals.

Navigation Season	Canada		United States		Britain		Other		Total
	Tons	P.C. of Total	Tons	P.C. of Total	Tons	P.C. of Total	Tons	P.C. of Total	Tons
1960	28,886,228	54.6	20,993,117	39.6	332,794	0.6	2,734,744	5.2	52,946,88
1961	31,487,898	55.1	23,175,964	40.5	315,991	0.5	2,242,843	3.9	57,222,69
1962	33,972,361	53.4	26,228,794	41.3	805,831	1.3	2,561,305	4.0	63,568,29
1963	41,976,843	56.3	28,431,960	38.1	1,054,929	1.4	3,121,695	4.2	74,585,42
1964	56,298,982	60.3	31,488,638	33.8	1,089,385	1.2	4,399,845	4.7	93,276,85
1965	56,008,416	56.3	33,747,380	34.0	2,088,813	2.1	7,550,508	7.6	99,395,11
1966	66,478,706	60.1	34,146,570	30.8	1,256,946	1.1	8,820,312	8.0	110,702,53
1967	58,928,929	59.1	29,391,183	29.5	1,222,411	1.2	9,231,051	9.3	98,773,57
1968	60,025,640	55.5	33,824,186	31.2	1,834,432	1.7	12,590,112	11.6	108,274,37
1969	47,676,306	49.0	38,103,480	39.1	1,233,780	1.3	10,343,668	10.6	97,357,23

10.—Tonnage of Products Carried by Canal, classified by Commodity Section,[1] Navigation Seasons 1968 and 1969

NOTE.—Figures include duplications where cargoes pass through two or more canals.

Year and Canal	Food, Feed, Beverages and Tobacco	Crude Materials, Inedible	Fabricated Materials, Inedible	End Products, Inedible	Miscellaneous Freight	Domestic Package Freight	Total
	tons	tons	tons	tons	tons	tons	tons
1968							
Sault Ste Marie	67,846	96,924	503,210	4,153	—	357,208	1,029,34
Welland	13,080,817	34,624,900	9,541,796	350,098	80,424	426,759	58,104,79
St. Lawrence River	12,728,555	23,605,647	10,501,399	441,087	188,952	480,261	47,945,90
Richelieu River	—	—	16,879	—	3,733	—	20,61
St. Peter's	46	—	—	—	12	—	5
Murray	—	—	—	—	—	—	—
Ottawa River	—	—	—	—	12	—	1
Rideau	—	—	—	—	—	—	—
Trent	—	—	—	95	—	—	9
St. Andrew's	1,258	—	935	822	—	—	3,01
Canso	174,459	110,444	845,534	—	40,105	—	1,170,54
Totals, 1968	**26,052,981**	**58,437,915**	**21,409,753**	**796,255**	**313,238**	**1,264,228**	**108,274,37**
1969							
Sault Ste Marie	86,180	153,942	658,804	63	79,144	449,708	1,427,84
Welland	12,165,774	31,906,687	8,623,425	347,442	91,392	438,580	53,573,30
St. Lawrence River	11,586,737	18,056,952	10,332,986	455,327	194,865	440,499	41,067,36
Richelieu River	—	—	15,534	—	3,248	—	18,78
St. Peter's	894	—	—	10	50	—	95
Murray	—	—	—	30	—	—	3
Ottawa River	—	—	—	696	—	—	69
Rideau	—	—	—	—	—	—	—
Trent	—	—	—	62	—	—	6
St. Andrew's	1,043	—	854	—	168	—	2,06
Canso	258,034	88,190	876,818	520	42,576	—	1,266,13
Totals, 1969	**24,098,662**	**50,205,771**	**20,508,421**	**804,150**	**411,443**	**1,328,787**	**97,357,23**

[1] Standard commodity classification.

.—Freight Traffic through Canadian Canals, by Direction and Origin, Navigation Season 1969

NOTE.—Figures include duplications where cargoes pass through two or more canals.

Canal	Traffic by Direction		Origins of Cargo			Total Cargo
	Up	Down	Canada	United States	Other Countries	
	tons	tons	tons	tons	tons	tons
ault Ste Marie	659,756	768,085	1,251,821	175,367	653	1,427,841
elland	19,361,535	34,211,765	22,588,518	25,967,801	5,016,981	53,573,300
. Lawrence River	22,464,909	18,602,457	22,547,240	11,960,312	6,559,814	41,067,366
ichelieu River	15,560	3,222	3,248	15,534	—	18,782
. Peter's	480	474	954	—	—	954
urray	—	30	30	—	—	30
ttawa River	671	25	696	—	—	696
ideau	—	—	—	—	—	—
rent	22	40	62	—	—	62
. Andrew's	592	1,473	2,065	—	—	2,065
anso	875,460	390,678	1,199,971	23,312	42,855	1,266,138
Totals	**43,378,985**	**53,978,249**	**47,594,605**	**38,142,326**	**11,620,303**	**97,357,234**

2.—St. Lawrence-Great Lakes Traffic using St. Lawrence, Welland and Sault Ste Marie Canals, 1968 and 1969

NOTE.—Duplications eliminated wherever possible.

Canals Used	1968			1969		
	Upbound Freight	Downbound Freight	Total	Upbound Freight	Downbound Freight	Total
	tons	tons	tons	tons	tons	tons
raffic using Canadian St. Lawrence-Great Lakes System	**33,769,733**	**33,531,428**	**67,301,161**	**25,811,178**	**36,149,056**	**61,960,234**
St. Lawrence only	7,206,573	1,216,359	8,422,932	6,024,660	1,361,123	7,385,783
St. Lawrence and Welland	23,191,197	16,309,053	39,500,250	16,430,008	17,197,411	33,627,419
St. Lawrence, Welland and Sault Ste Marie	8,333	14,347	22,680	10,241	43,923	54,164
Welland only	2,881,337	15,467,301	18,348,638	2,696,754	16,822,437	19,519,191
Welland and Sault Ste Marie	143,206	89,961	233,167	225,871	147,994	373,865
Sault Ste Marie	339,087	434,407	773,494	423,644	576,168	999,812
raffic using United States Locks at Sault Ste Marie	**10,040,627**	**78,272,213**	**88,312,840**	**9,734,294**	**87,344,852**	**97,079,146**
Totals	**43,810,360**	**111,803,641**	**155,614,001**	**35,545,472**	**123,493,908**	**159,039,380**

Cargo passing through the Canadian lock and the United States locks at Sault Ste Marie during 1969 totalled 98,506,987 tons, more than the 89,342,181 tons during the 1968 season but appreciably less than the record 128,489,170 tons reported for 1953. The United States locks, because of their larger facilities, accounted for all but 1,427,841 tons of the total. Iron ore, grains and coal normally contribute more than 90 p.c. of the combined tonnage moving through the Canadian and United States locks, most of it downbound. Because upbound transits are often in ballast, the 1969 upbound cargo accounted for only 10,394,050 tons of the total and consisted mainly of coal, gravel, liquid fuels and manufactured goods. Iron ore mines alone contributed 74,583,888 tons or 75.7 p.c. of the total 1969 traffic as against 65,681,543 tons in 1968, and wheat shipments were 7,960,799 tons as against 8,430,960 tons in the same comparison. A relatively small volume of wheat moves directly overseas—most of it is carried by the laker fleet to elevators along the St. Lawrence River to await trans-shipment to ocean-going vessels. Bituminous coal recorded a second consecutive decline in 1969 to 6,571,324 tons from 6,702,220 tons in 1968 but larger tanker cargoes of gasoline and fuel oil more than offset that loss.

Canadian Use of the Panama Canal.—The use of the Panama Canal as a transport facility for the movement of goods from one Canadian port to another is of relatively minor

importance. Of the total of 5,966,547 long tons of cargo leaving the West Coast of Canada in the year ended June 30, 1969 and passing through the Panama Canal, none were destined for eastern Canadian ports. Similarly, of the 1,313,554 long tons of cargo leaving eastern Canadian ports and passing through the Panama Canal, none were destined for western Canadian ports. The total tonnage passing through the Panama Canal and arriving in Canadian West Coast ports from any origin, Canada or elsewhere, amounted to 1,668,443 long tons in the year ended June 30, 1969; the total from any origin arriving at eastern Canadian ports after having passed through the Panama Canal was 666,764 long tons.

Subsection 4.—The St. Lawrence Seaway

Events leading up to the beginning of the St. Lawrence Seaway project and the progress made during the years of its construction are covered in the 1954 to 1959 Year Books. The 1956 edition (pp. 821-829) gives detailed information on Great Lakes–St. Lawrence waterway traffic immediately prior to the beginning of construction on the project and the 1960 Year Book (pp. 851-860) relates the story of the Seaway during the second year of its operation. The first decade of Seaway development and operations is discussed in the 1969 edition (pp. 841-845).

The St. Lawrence Seaway Authority, constituted as a Corporation by Act of Parliament in 1951 (RSC 1952, c. 242), undertook the construction (and subsequent maintenance and operation) of Canadian facilities between Montreal and Lake Erie to allow 27-foot navigation, concurrently with the construction of similar facilities in the International Rapids Section of the St. Lawrence River by the Saint Lawrence Seaway Development Corporation of the United States. The Seaway was opened to commercial traffic on Apr. 1, 1959 and officially opened on June 26, 1959. With the opening of the Seaway certain ancillary canals were transferred to the jurisdiction of the St. Lawrence Seaway Authority for operation and maintenance purposes. These include the Lachine, a section of the Cornwall Canal, a portion of the third Welland Canal and the Canadian locks at Sault Ste Marie. Tolls are not assessed against vessel movements on these waterways and traffic data for them are not included in this Subsection. Major construction undertaken in 1967 was on the channel to bypass the city of Welland, scheduled for completion by the navigation season of 1972.

Seaway Traffic.—Tables **13** and **14** give combined traffic statistics of the St. Lawrence and Welland Canals for the years 1968 and 1969. Duplicate transits are eliminated so that the figures show the actual total movement of goods through the St. Lawrence Seaway.

13.—Summary Statistics of St. Lawrence Seaway Traffic, 1968 and 1969

(Combined traffic of the Montreal–Lake Ontario Section and the Welland Canal, with duplications eliminated)

Item	Upbound				Downbound			
	1968		1969		1968		1969	
	No. of Transits	Cargo Tons	No. of Transits	Cargo Tons	No. of Transits	Cargo Tons	No. of Transits	Cargo Tons
Type of Vessel								
Ocean—								
Cargo	1,128	7,382,576	1,121	5,854,794	1,117	7,046,793	1,130	7,877,021
Tanker	66	597,327	80	736,166	67	246,510	86	277,420
Inland—								
Cargo	2,248	21,597,483	2,007	15,021,395	2,279	24,504,730	2,009	25,882,532
Tug and barge	34	7,933	35	8,604	47	53,386	37	67,612
Tanker	600	2,569,685	680	2,959,811	604	765,915	681	860,321
Coastal—								
Cargo	95	838,223	76	358,955	101	248,962	85	313,644
Tug and barge	104	224,807	90	189,679	115	219,745	98	217,834
Tanker	7	95,353	19	185,070	7	2,142	14	5,134

13.—Summary Statistics of St. Lawrence Seaway Traffic, 1968 and 1969—concluded

Item	Upbound				Downbound			
	1968		1969		1968		1969	
	No. of Transits	Cargo Tons	No. of Transits	Cargo Tons	No. of Transits	Cargo Tons	No. of Transits	Cargo Tons
e of Vessel—concluded								
cargo—								
g and barge	113	—	122	—	91	—	75	—
other[1]	160	—	306	—	202	—	343	—
Totals	**4,555**	**33,313,387**	**4,536**	**25,314,474**	**4,630**	**33,088,183**	**4,558**	**35,501,518**
Type of Cargo								
	2,177	25,884,934	1,891	19,693,222	2,461	30,827,795	2,475	32,731,680
ral	888	6,253,594	808	4,778,622	109	219,004	211	1,001,418
i	333	1,174,859	288	842,630	533	2,041,384	473	1,768,420
ngers	—	—	104	—	—	—	103	—
llast—								
ean	34	—	112	—	141	—	102	—
ker	825	—	980	—	996	—	827	—
astal	25	—	33	—	97	—	57	—
her	273	—	320	—	293	—	310	—
Type of Traffic								
estic—								
nada to Canada	1,428	7,641,516	1,455	5,980,119	1,655	8,384,958	1,628	8,902,123
nada to United States	1,663	17,347,776	1,494	12,364,839	14	28,467	16	3,617
ited States to Canada	10	22,106	18	104,799	1,488	16,793,687	1,304	17,856,575
ited States to United tates	258	312,520	368	273,757	288	610,904	391	584,762
gn—								
nada—								
mport	203	995,876	266	1,023,764	—	—	—	—
Export	—	—	—	—	230	749,330	292	740,254
ited States—								
mport	993	6,993,593	935	5,567,196	—	—	—	—
Export	—	—	—	—	955	6,520,837	927	7,414,187

[1] Includes naval vessels.

14.—St. Lawrence Seaway Traffic classified by Type of Cargo, 1967-69

ombined traffic of the Montreal–Lake Ontario Section and the Welland Canal, with duplications eliminated)

Commodity	1967		1968		1969	
	Cargo Tons	P.C. of Total	Cargo Tons	P.C. of Total	Cargo Tons	P.C. of Total
ultural Products	**15,563,298**	**25.5**	**14,958,798**	**22.5**	**14,236,468**	**23.4**
eat	7,573,514	12.4	7,146,996	10.8	5,568,614	9.2
rn	2,294,174	3.8	3,414,333	5.1	3,608,498	5.9
e	153,840	0.3	103,501	0.1	72,794	0.1
s	519,920	0.9	299,778	0.5	268,477	0.4
ley	1,617,820	2.6	711,936	1.1	964,413	1.6
ur, wheat	90,358	0.1	117,538	0.2	137,590	0.2
ur, edible, other	24,911	--	9,003	--	8,682	--
ybeans	1,388,433	2.3	1,717,384	2.6	2,129,722	3.5
ybean oil, cake and meal	565,898	0.9	187,631	0.3	213,747	0.4
ans and peas	107,013	0.2	98,086	0.1	96,758	0.2
lt	115,664	0.2	97,550	0.1	79,695	0.1
xseed	432,570	0.7	353,970	0.5	435,952	0.7
her agricultural products	679,183	1.1	701,092	1.1	651,526	1.1

14.—St. Lawrence Seaway Traffic classified by Type of Cargo, 1967-69—concluded

Commodity	1967		1968		1969	
	Cargo Tons	P.C. of Total	Cargo Tons	P.C. of Total	Cargo Tons	P.C. To
Animal Products	**401,131**	**0.6**	**366,488**	**0.6**	**347,422**	**0**
Packing house products, edible	76,409	0.1	68,478	0.1	79,156	0
Hides, skins and pelts	83,123	0.1	82,928	0.1	100,768	0
Other animal products	241,599	0.4	215,082	0.4	167,498	0
Mineral Products	**32,391,224**	**53.3**	**36,028,416**	**54.3**	**30,367,581**	**49**
Bituminous coal	9,483,403	15.6	10,586,944	15.9	11,043,334	18
Coke	259,949	0.4	347,031	0.5	392,780	0
Iron ore	19,338,227	31.7	21,315,386	32.1	15,300,264	25
Aluminum ore and concentrates	92,466	0.1	100,651	0.2	142,408	0
Clay and bentonite	215,057	0.4	253,422	0.4	245,489	0
Gravel and sand	22,817	--	61,599	0.1	105,904	0
Stone, ground or crushed	1,063,833	1.8	1,486,626	2.2	1,321,273	2
Stone, rough	88,758	0.1	16,309	--	3,530	-
Petroleum, crude	128,385	0.3	122,361	0.2	102,130	0
Salt	875,370	1.5	1,038,957	1.6	821,358	1
Phosphate rock	27,116	--	—	—	—	-
Sulphur	24,121	--	—	—	—	-
Other mineral products	771,722	1.4	699,130	1.1	889,111	1
Forest Products	**392,541**	**0.6**	**422,327**	**0.6**	**355,346**	**0**
Pulpwood	279,675	0.4	291,102	0.4	199,958	0
Other forest products	112,866	0.2	131,225	0.2	155,388	0
Manufactures and Miscellaneous	**11,590,412**	**19.0**	**13,734,509**	**20.7**	**14,659,404**	**24**
Gasoline	608,817	1.0	563,515	0.8	762,923	1
Fuel oil	2,791,944	4.6	2,905,935	4.4	3,357,422	5
Lubricating oils and greases	73,196	0.1	141,745	0.2	126,210	0
Petroleum products, other	154,634	0.2	135,006	0.2	71,205	0
Rubber, crude, natural and synthetic	152,469	0.2	166,719	0.3	170,349	0
Chemicals	394,313	0.6	310,433	0.5	406,075	0
Sodium products	109,875	0.2	109,505	0.2	170,396	0
Tar, pitch and creosote	139,597	0.2	138,737	0.2	176,060	0
Pig iron	250,078	0.4	259,316	0.4	248,936	0
Iron and steel, bars, rods, slabs	102,525	0.2	131,027	0.2	75,827	0
Iron and steel, nails, wire	108,248	0.2	164,177	0.2	138,745	0
Iron and steel, manufactured	3,294,069	5.5	5,191,857	7.8	4,268,408	7
Machinery and machines	108,461	0.2	136,326	0.2	96,471	0
Cement	93,393	0.1	40,376	0.1	146,027	0
Wood pulp	57,453	0.1	62,317	0.1	38,848	0
Newsprint	472,903	0.8	356,868	0.5	322,080	0
Syrup and molasses	132,893	0.2	143,168	0.2	131,314	0
Sugar	168,546	0.3	184,815	0.3	206,815	0
Food products	309,355	0.5	364,016	0.5	309,287	0
Scrap iron and steel	460,196	0.7	436,348	0.7	1,353,857	2
Other manufactures and miscellaneous	1,607,447	2.7	1,792,303	2.7	2,082,149	3
Package Freight	**584,850**	**1.0**	**891,032**	**1.3**	**849,771**	**1**
Package freight—domestic	559,553	1.0	868,286	1.3	827,125	1
Package freight—foreign	25,297	--	22,746	--	22,646	-
Totals	**60,923,456**	**100.0**	**66,401,570**	**100.0**	**60,815,992**	**100**

In 1969, 4,536 ships carrying about 25,314,000 tons of cargo moved upbound throu the Seaway and 4,558 vessels carrying 35,501,000 tons moved downbound. Ocean-goi ships carried 24.2 p.c. of the total cargoes and lakers 75.8 p.c. Of the total tonnage carri upbound in 1969, 18,723,000 tons were domestic cargo and 6,591,000 tons were forei traffic; downbound, 27,347,000 tons were domestic freight and 8,154,000 tons were carri to and from foreign ports.

On the Montreal–Lake Ontario section, upbound traffic amounted to 22,445,000 t in 1969 and downbound traffic to 18,569,000 tons, a decrease of 14.5 p.c. from 1968. Alm 51.5 p.c. of the former was accounted for by iron ore shipped from St. Lawrence ports Hamilton and Lake Erie, and the latter consisted largely of overseas shipments of whe There were 72 fewer upbound transits and 112 fewer downbound transits in 1969 than

968, indicating a slight decrease in the number of vessels using this portion of the Seaway. Bulk cargo comprised 82.8 p.c. of the total traffic through the section in 1969, the principal ommodities through the St. Lawrence canals being iron ore, wheat, corn, fuel oil, soybeans nd scrap iron and steel. Traffic patterns show that 25.8 p.c. of the total movement was etween Canadian ports, 38.0 p.c. moved between Canadian and United States ports and 5.9 p.c. consisted of foreign trade to and from Canada and the United States. The small emainder was traffic between ports in the United States.

There were 6,863 transits through the Welland Canal in 1969, with a cargo volume of 9,379,000 tons upbound and 34,153,000 tons downbound; bulk cargo accounted for 88.4 p.c. f the traffic. Although many vessels pass through both the St. Lawrence and the Welland anals on "through" trips, there is a substantial amount of local traffic between Great akes ports which involves only the Welland Canal. These movements are largely of on ore, grain and coal. The Welland Canal traffic was 12,518,000 cargo tons greater than hat reported for the Montreal–Lake Ontario section.

Income of the St. Lawrence Seaway Authority for 1969 amounted to $20,601,270, omprising toll revenue of $18,138,610 assessed for transits through the Seaway locks etween Montreal and Lake Ontario and sundry revenues (rentals, wharfage, bridge rev- nue, etc.) of $2,462,660. Total expenses for 1969 amounted to $17,544,146, of which peration and maintenance expenses amounted to $11,929,907, regional headquarters, eadquarters administration and engineering expenses amounted to $4,798,851, and con- truction to $815,388.

15.—St. Lawrence Seaway Authority Expenditures, 1966-69

Item	1966	1967	1968	1969
	$	$	$	$
dministration—				
Headquarters	1,272,775	1,583,978	1,850,183	2,235,904
Regional	1,426,065	1,565,116	1,212,996	1,402,586
Engineering	538,406	788,132	1,171,734	1,160,361
Construction Branch	—	197,564	703,219	815,388
peration and Maintenance—				
Salaries and wages	5,883,554	6,132,316	6,228,868	6,924,685
Employee benefits	632,612	703,651	659,806	781,397
Maintenance materials and services	4,704,574	3,420,826	3,765,857	3,018,200
Grants in lieu of municipal taxes	488,664	530,695	597,697	684,466
Other operation and maintenance expenses	551,475	319,857	552,974	521,159
Totals	**15,498,125**	**15,242,135**	**16,743,334**	**17,544,146**

Section 2.—Marine Services of the Federal Government

The Marine Services of the Ministry of Transport comprises four Branches—Marine Works, Marine Regulations, Marine Operations, and Marine Hydraulics—each headed by director responsible to the Administrator, Canadian Marine Transportation Admini- tration.

The *Marine Works Branch* responsibilities include provision and maintenance of aids o navigation, maintenance and management of Canada's secondary canals, administration f public harbours and wharves, and general supervision of harbour commissions. It has hree Divisions—Aids to Navigation, Canals, and Harbours and Property.

The *Marine Regulations Branch*, with two Divisions—Steamship Inspection and Nautical and Pilotage—is responsible for the administration of those parts of the Canada Shipping Act that relate to the operations of Canadian ships and ships within Canadian waters. It is charged with the registry and licensing of ships, the certification of ships' officers and the engagement and discharge of ships' crews. Other responsibilities include

pilotage, safety inspection of ships, handling of dangerous cargoes, prevention of oil pollution of Canadian waterways and air pollution by ships, and the investigation of marine accidents. It is also responsible for the co-ordination of Canada's participation in the Intergovernmental Maritime Consultative Organization, a United Nations body charged with the promotion of marine safety on an international basis.

The *Marine Operations Branch* is responsible for operating the departmental fleet, the Canadian Coast Guard, which consists of 146 ships of various types including both heavy and light icebreakers, an icebreaking cable repair ship and two weather-oceanographic ships, the CCGS *Vancouver* and CCGS *Quadra*, which alternate in manning Weather Station "Papa" in the Pacific Ocean.

A principal duty of the fleet is tending lighthouses, buoys and other aids to navigation in Canadian coastal and inland waters. Coast Guard ships, including icebreakers, take part each summer in the Ministry's Arctic re-supply operations, moving some 100,000 tons of cargo to more than 40 ports of call in the Far North. These ships work in conjunction with a number of chartered commercial vessels which carry most of the cargo. During the winter, the icebreakers operate in support of commercial shipping in the Gulf of St. Lawrence from Cabot Strait to the Quebec North Shore. They also operate in the St. Lawrence River to break ice jams and prevent flooding, particularly in the section between Trois-Rivières and Montreal.

The Coast Guard ships assist with projects of other Canadian Government departments, such as scientific programs carried out by research teams based aboard various ships ranging from the Great Lakes to the High Arctic in such fields as oceanography, hydrography and related sciences. Departments concerned with the development of the Canadian Arctic and with the welfare of its population also carry out their undertakings with the aid of Coast Guard ships.

A Canadian Coast Guard Officer Training College, officially opened in September 1966 at Sydney, N.S., provides a four-year course for students, who will graduate as junior engine-room or deck officers. Upon acquiring the necessary sea experience, they may take the examinations to earn the rank of engineer first-class or of master foreign-going.

The *Marine Hydraulics Branch* comprises three Divisions—Marine Hydraulics, the St. Lawrence Ship Channel, and Marine Traffic Control. Marine Hydraulics deals with the hydraulic and engineering aspects of providing navigable channels for marine transportation on the Great Lakes and the St. Lawrence River. Maintenance and improvements of the St. Lawrence River below Montreal and of the Saguenay River are under the jurisdiction of the St. Lawrence Ship Channel Division, which is located in Montreal.

In the interests of St. Lawrence River traffic safety, a Marine Traffic Control Service was established on Apr. 3, 1967, as a result of studies initiated by the Ministry in 1964. Using very high frequency (VHF) radio equipment, the Service keeps track of ship traffic in much the same way as the air traffic controllers watch over the busy sky lanes. The information needed to assist ships' masters in the safe conduct of their vessels comes from two main traffic control centres—one at Quebec and the other at Montreal—six shore stations and 18 reporting points along the river between Montreal and Les Escoumins, Que. All ships navigating the river must be equipped with the required VHF equipment to take advantage of the service.

Field Organization.—In the field, a regional management organization within the Marine Services is being developed. This system will provide the Ministry with more efficient means of matching resources to workloads in all areas. Included in the completed system will be the 11 district marine agencies that have existed for many years, and some 15 other Marine Services field offices that in the past have been reporting individually to Marine Services directors or to the Administrator, Canadian Marine Transportation Administration.

The first step was completed in May 1967 with the establishment of the Maritime Region. This covers the Maritime Provinces and their outlying islands including Sable

nd and the Magdalen Islands, and embraces all Marine Works, Marine Operations and rine Regulations activities in the three provinces. In July 1968, the Western Region, uding the Pacific Coast, western and northwestern Canadian waterways and the western tic, was established with the same responsibilities as the Maritime Region. Other ions will be formed as reorganization progresses.

Aids to Navigation.—The Canadian system of aids to navigation is similar to that ther North American countries. Such aids maintained by the Ministry of Transport Canadian and contiguous waters consist of buoys, lightships, lighthouses, day beacons, o beacons and two electronic networks operating on the hyperbolic principle—Loran Decca. The numbers of danger signals maintained during the years ended Mar. 31, 8 and 1969 were:—

Type of Aid	*1967-68*	*1968-69*
	No.	No.
Lights	3,757	3,853
Lightships	1	1
Fog signals	390	384
Lighted buoys	2,199	2,300
Unlighted buoys and beacons	13,448	15,842

All aids incorporating light or sound devices are listed in the Ministry of Transport ual publication *List of Lights and Fog Signals.* Information on the radio beacons and Loran and Decca is published in *Radio Aids to Marine Navigation.*

Navigable waters have been improved greatly by dredging in channels and harbours, the removal of obstructions, and by the building of remedial works to maintain or trol water levels. Incidental to these developments of navigable waters are works to rd shorelines and prevent erosion, and for the control of roads and bridges that cross igable channels.

St. Lawrence Ship Channel.—This channel extends from about 40 miles below Quebec y to Montreal, a distance of 200 miles. About 130 miles of this distance is dredged nnel. In the Montreal–Quebec reach, the channel has a limiting depth of 35 feet at reme low water and a minimum width of 800 feet. Below Quebec the limiting depth of dged channel, about 15 miles in length, is 30 feet at low tide, with a width of 1,000 feet. average tidal range of 15 feet in this area provides sufficient depth for any vessel using St. Lawrence route. Above Quebec, maintenance requirements as a result of silting his dredged channel are relatively minor but below the city silting is more pronounced ause of tidal action.

The Ship Channel is well defined by buoys and the centre marked by range lights, mitting uninterrupted day and night navigation throughout the open season. Year- nd navigation from the sea to Montreal is made possible for reinforced ships by con- ious icebreaking operations in the Ship Channel. The movements of ships, weather ice conditions and obstructions to traffic throughout the St. Lawrence waterway are de available through the Marine Traffic Control Service (see p. 934).

Saguenay River.—The Saguenay River constitutes a naturally deep waterway up to e des Ha! Ha! on which lie the ports of Port Alfred and Bagotville. A dredged channel naintained from St. Fulgence up to the port of Chicoutimi, providing a limiting depth of feet at lowest normal tide and a minimum width of 250 feet.

Steamship Inspection.—The Steamship Inspection Service was established by hority of the Canada Shipping Act. Its functions include the formulation and subse- nt enforcement of regulations concerned with the approval of design of hulls, machinery l equipment of ships; inspection during construction; periodic inspection and issuance nspection certificates; the assignment of load lines; the conditions under which dangerous ds may be carried in ships; the protection against accident of workers employed in

loading and unloading ships; the protection from pollution of Canadian territorial wat by oil, chemicals, garbage, sewage or any other substances from ships; control of polluti of the atmosphere by smoke emitted by ships; control of the powering, equipment and lo limits of small vessels; and the certification of marine engineers. The Board also prepa correspondence courses in marine engineering for use in Marine Engineering Schools n controlled by the Department of Labour.

The Chairman and the Board of Steamship Inspection are located at Ottawa a field offices are maintained in the principal ocean and inland ports. A total of 1,8 vessels of Canadian ownership or registry, including 449 passenger ships, 141 new shi built in Canada, nine ships built outside Canada for registry in Canada, and 14 converted reconditioned ships were inspected during the year ended Mar. 31, 1969.

Pilotage.—Pilotage service functions under the provisions of Part VI and Part V of the Canada Shipping Act. Wherever a pilotage district has been created by the Go ernor in Council, qualified pilots are licensed by the pilotage authority of the distri There are in Canada 24 pilotage districts, in nine of which the Minister of Transport the pilotage authority (see Table 16); in each of the other districts the authority is a lo body appointed by the Governor in Council. There are also three districts that a administered jointly by Canada and the United States; and one area in which the Minist of Transport provides qualified pilots.

16.—Pilotage Service, by Pilotage District, 1968 and 1969

District	1968		1969	
	Pilotage Trips	Net Registered Tonnage	Pilotage Trips	Net Registere Tonnage
	No.		No.	
Bras d'Or Lakes, N.S.	236	1,087,155	267	1,405,17
Sydney, N.S.	552	2,113,995	551	1,906,60
Halifax, N.S.	4,160	12,911,606	4,246	13,393,30
Saint John, N.B.	1,356	5,409,028	1,540	6,108,66
Quebec, Que.	8,405	49,359,531	8,022	46,698,95
Montreal, Que.	9,880	53,196,454	9,049	48,426,56
Cornwall, Ont.	2,778	11,586,353	2,817	12,160,81
Churchill, Man.	137	590,941	131	520,90
British Columbia	7,180	42,266,906	6,742	41,377,75
Totals	**34,684**	**178,521,969**	**33,365**	**171,998,73**

PART IV.—CIVIL AIR TRANSPORT

Section 1.—Civil Aviation Administration and Policy

Administration.—Civil aviation in Canada is under the jurisdiction of the Feder Government and is administered under the authority of the Aeronautics Act and t National Transportation Act and amendments thereto. The Aeronautics Act is in thr parts. Broadly speaking, Part I deals with the technical side of civil aviation comprisi matters of registration of aircraft, licensing of airmen, the establishment and maintenan of airports and facilities for air navigation, air traffic control, accident investigation a the safe operation of aircraft. This Part of the Act is administered by the Director Civil Aviation under the supervision of the Assistant Deputy Minister, Air Service Ministry of Transport. Part II of the Act deals with the economic aspects of commerci air services and assigns to the Canadian Transport Commission certain regulatory functio of commercial air services (see p. 959). Part III deals with matters of government intern administration in connection with the Act.

International Air Agreements.—The position of Canada in the field of aviation as l as its geographical location makes imperative its co-operation with other nations of world engaged in international civil aviation. Canada therefore took a major part in original discussions that led to the establishment of the International Civil Aviation ganization (ICAO) which has headquarters at Montreal, Que. In 1970, Canada had agreements with 25 other countries.

During 1969, two countries—the Netherlands and New Zealand—abrogated their air reements with Canada. CP Air was required to cease services to New Zealand but h CP Air and KLM continue to operate between Canada and the Netherlands under cial authorities issued by the respective governments.

Federal Civil Aviation Policy.—The intent of Federal Government concern in il aviation is to provide an efficient and stable service for the Canadian public and the t possible economic framework for the orderly development of commercial aviation. In mulating its aviation policy in 1964, three principles were accepted by the Government basic. The first related to the international field and stated that air services provided by nadian airlines should serve the Canadian interest as a whole; that these services should be competitive or conflicting but should represent a single integrated plan which could be ieved by amalgamation, by partnership or by a clear division of fields of operations. a further policy statement in June 1965, the Minister of Transport defined more precisely respective areas of operation of Air Canada and Canadian Pacific Air Lines Limited P Air) and additional international air services have since been introduced consistent h Government policy.

The second principle concerned the domestic mainline services and stated that, although mpetition was not to be rejected, development of competition should not compromise seriously injure the economic viability of Air Canada's domestic operations which resent the essential framework of its network of domestic services, and in the event that mpetition continues, opportunity should be ensured for growth to both lines above this ic minimum. In accordance with this principle, the Government has authorized the nadian Transport Commission to permit CP Air to operate additional transcontinental services, and to serve Calgary, Edmonton and Ottawa in addition to Vancouver, Win- eg, Toronto and Montreal which were already being served.

The third principle concerned the role of regional air carriers providing scheduled vice and their relationship with the mainline carriers. Recommendations were prepared the two major airlines and the larger regional carriers which resulted in a "Statement of nciples for Regional Air Carriers" tabled in the House of Commons on Oct. 20, 1966, the Minister of Transport. These principles are summarized as follows:—

(1) Regional carriers will provide regular route operations into the North and will operate local or regional routes to supplement the domestic mainline operations of Air Canada and CP Air; they will be limited to a regional role.

(2) Greater scope will be allowed regional carriers in the development of routes and services by the following means: (*a*) where appropriate, limited competition on mainline route segments of Air Canada or CP Air may be permitted to regional carriers if this is consistent with their local route development; (*b*) in a few cases, secondary routes at present operated by Air Canada and CP Air may become eligible for transfer to regional carriers; and (*c*) a larger role will be allotted to regional carriers in connection with the development of domestic and international charter services, inclusive tours and new types of services.

(3) Greater co-operation between the mainline carriers and the regional carriers will be developed in a variety of fields, ranging from technical and servicing arrangements to joint fare arrangements.

(4) A limited policy of temporary subsidies for regional routes will be introduced, to be based upon a "use it or lose it" formula.

(5) Firmer control will be exercised over the financial structure of regional carriers in connection with new licensing arrangements.

(6) Regional carriers will be assisted with the acquisition of aircraft by development of a scheme for consultation between government and the carriers regarding plans for new aircraft, and by a special investigation designed to explore the possibility of developing a joint approach to this problem on the part of the carriers.

In a statement made on Aug. 15, 1969, the Minister of Transport defined more p cisely the regions in which each of the five regional carriers would be permitted to supp ment or authorized to replace mainline operations as circumstances warranted, and autl ized the Canadian Transport Commission, in consultation with the mainline carriers a appropriate regional carriers, to give urgent consideration to the application of the regio policy. During 1969, the Air Transport Committee issued a number of decisions authoriz new services by regional air carriers in accordance with the Regional Air Policy, and Committee is continuing an orderly application of this policy in consultation with the ma line and regional carriers, and in accordance with the procedures of the Canadian Transp Commission.

Thus, in the international field, the joint approach to the provision of world-w service by the two major Canadian carriers is intended to strengthen their position in a v competitive field and provide a better over-all service to the travelling public. In domestic field, a degree of competition remains to provide the public with the advanta that can result from a competitive atmosphere but avoids excesses of competition t could be ruinous to the operators and unsatisfactory to the public.

Section 2.—Current Air Services

The Canadian flag carriers operating on international air routes are Air Canada a CP Air, which together earn 77 p.c. of the total operating revenues of Canadian co mercial air carriers; the five regional carriers (Eastern Provincial Airways, Norda Quebecair, Pacific Western Airlines and Transair) earn 12 p.c. The remaining 11 p.c. earned by some 400 smaller airlines operating scheduled and non-scheduled services, ma of them in Canada's hinterland which is relatively inaccessible by surface transport. international routes, the Canadian flag carriers provide scheduled services to Europe, t Soviet Union, Japan and Hong Kong, Central and South America, the Commonwea Caribbean, Australia and the United States (including Hawaii). Twenty-nine Comm wealth and foreign airlines have scheduled services between Canada and other countr (see p. 944).

The Canadian Transport Commission (Air Transport Committee) in its Direct of Canadian Commercial Air Services classifies commercial air carriers into two ma groups—domestic and international—and divides these groups into nine classes:—

Domestic Air Carriers—

(1) *Scheduled Air Carriers*—which offer public transportation of persons, mails and/or goods aircraft, serving designated points in accordance with a service schedule and at a toll unit;

(2) *Regular Specific Point Air Carriers*—which offer public transportation of persons, mails an or goods by aircraft serving designated points on a route pattern and with some degree regularity, at a toll per unit;

(3) *Irregular Specific Point Air Carriers*—which offer public transportation of persons, mails an or goods by aircraft, from a designated base, serving a defined area or a specific point points, at a toll per unit;

(4) *Charter Air Carriers*—which offer public transportation of persons and/or goods by aircra from a designated base, at a toll per mile or per hour for the charter of the entire aircra or at such other tolls as may be permitted by the Air Transport Committee;

(5) *Contract Air Carriers*—which do not offer public transportation but which transport pers and/or goods solely in accordance with one or more specific contracts;

(6) *Flying Clubs*—which are air carriers incorporated as non-profit organizations for the purp of furnishing flying training and recreational flying to club members;

(7) *Specialty Air Carriers*—which operate for purposes not provided for by any other class su as aerial photography and survey, aerial distribution (crop dusting, pest control, seedin aerial inspection, reconnaissance and advertising (forest, fire patrol, pipelines), aerial conti (fire, water-bombing), aerial construction, and air ambulance and mercy services.

International Air Carriers—

(8) *International Scheduled Air Carriers*—are commercial carriers designated by the Government of any state to operate international scheduled air services between Canada and any other state, pursuant to an international agreement to which Canada is a party; and

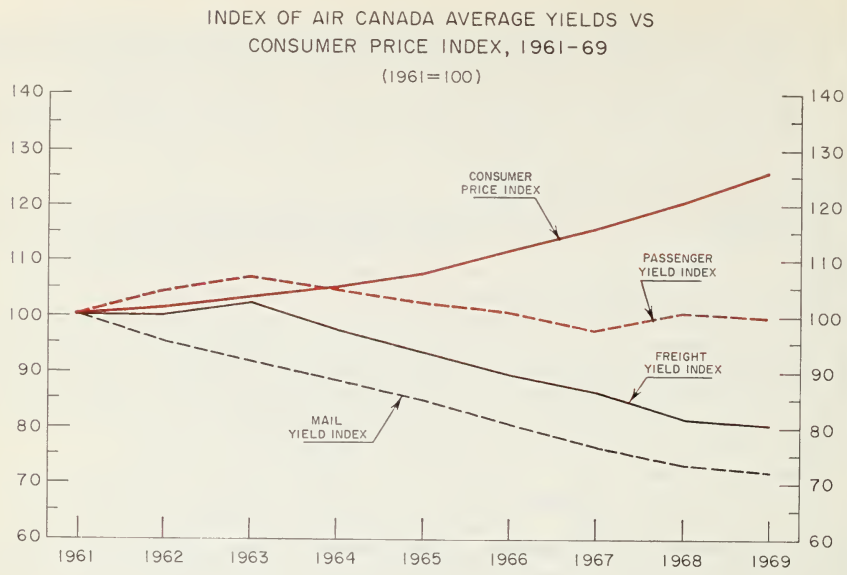
(9) *International Non-scheduled Air Carriers*—are carriers which are permitted by the Air Transport Committee to operate, between Canada and any other state, any commercial air service that is not a scheduled service.

Canada's International Flag Carriers

Air Canada.—The high standards of technical excellence coupled with a route network of 89,000 unduplicated route miles in domestic and international commercial air services extending to 62 destinations in Canada, the United States, the British Isles, Europe and the Caribbean, have made Air Canada a major asset to the Canadian nation. The years 1968 and 1969, the 31st and 32nd of Air Canada's operations, were characterized by modest increases in passenger traffic and lower load factors when compared with 1967 during which year, under the stimulus of Canada's Centennial celebrations (including Expo 67) and the Pan American games, traffic growth was exceptional. In general, the orderly growth of passenger traffic in 1968 and 1969 was adversely affected by labour and other social unrest in various areas of the world and by a decline in immigration to Canada.

Passengers carried on all services by Air Canada numbered 6,400,000 in 1968 and 6,600,000 in 1969, representing marginal increases of 1.0 p.c. in 1968 over 1967 and 3.1 p.c. in 1969 over 1968. Available seat-miles on scheduled services were up 4 p.c. to 10,100,000,000 in 1969 from 9,700,000,000 in 1968, while revenue passenger-miles on scheduled services reached 5,700,000,000, up 2 p.c. in 1969 from 5,600,000,000 in 1968. Passenger load factors on scheduled services continued to decline, from 66 p.c.

A million-dollar guarded shipment of paintings, antique porcelain, silver, arms, armour and furniture leaving London Airport by Air Canada DC-8 Jet Trader aircraft for Toronto, to be later sold by auction by the world-famous Sotheby's of London.



in 1966 to 65 p.c. in 1967, to 58 p.c. in 1968 and to 57 p.c. in 1969. Operating revenues in 1969 rose a modest 4 p.c. to $405,000,000, of which passenger revenue on scheduled services was $333,000,000, an increase by only 1 p.c., over the operating revenues for 1968. There was a phenomenal 73-p.c. increase in revenues from charter operations to $8,800,000 in 1969 over the previous year; freight revenues increased by 14 p.c. and mail revenues by 10 p.c. Net income after taxes was $1,500,000 in 1969 compared with $8,200,000 in 1968.

1.—Operating Statistics of Air Canada, 1960-69

NOTE.—Some of the figures in this table have been calculated from the monthly reports of Air Canada but most of them are from the audited annual reports of the corporation; there are slight variations in a few of the figures but the degree of error is less than 1 p.c.

Year	Traffic				Operating Revenue			Operating Expenses	Operating Profit	Net Income
	Revenue Passengers[1]		Revenue Commodity[2]	Mail						
	No.	Passenger-miles	Ton-miles	Ton-miles	Passenger	Freight[3] and Mail	Total[4]			
	'000	'000	'000	'000	$'000	$'000	$'000	$'000	$'000	$'000
1960...	3,440	2,050,600	20,868	11,593	127,596	19,307	148,987	147,934	1,052	(2.6)
1961...	3,712	2,481,122	24,091	11,934	143,301	19,466	165,436	163,292	2,144	(6.4)
1962...	3,865	2,659,578	29,827	12,862	158,792	21,914	183,473	176,078	7,395	(3.5)
1963...	3,967	2,887,239	35,781	13,859	167,653	24,088	199,390	188,122	11,268	0.5
1964...	4,189	3,150,956	45,590	15,731	177,091	27,684	213,910	203,527	10,383	1.4
1965...	4,753	3,715,635	61,662	17,287	209,926	31,839	250,126	237,401	12,725	4.0
1966...	5,294	4,331,583	80,917	19,081	243,877	36,924	289,943	275,990	13,953	2.9
1967...	6,393	5,341,223	92,427	21,529	295,553	40,230	345,611	329,731	15,880	3.5
1968...	6,469	5,752,774	130,805	22,860	328,137	50,854	387,628	359,610	28,018	8.2
1969...	6,563	6,018,297	155,900	25,151	332,727	57,315	404,652	386,188	18,464	1.5

[1] Scheduled and non-scheduled services. [2] Freight, express and excess baggage. [3] Freight includes express and excess baggage. [4] Passenger, freight, excess baggage and mail, plus all other operating revenue.

During 1969, Air Canada acquired six DC-8-63s and two DC-93s; at the year-end the rporation's fleet consisted of 112 aircraft comprising 32 DC-8s, 33 DC-9s, 12 Vanguards nd 35 Viscounts. Jet travel continued on the up-trend; in 1969 jets accounted for 85 p.c. total available seat-miles compared with 75 p.c. for the previous year.

Canadian Pacific Air Lines Limited (CP Air).—This private airline was established 1942 by integrating a number of small bushline air carrier companies and has since eveloped into a major national flag carrier for Canada. In 1969, CP Air carried 1,300,000 venue passengers 2,216,000,000 passenger-miles; of this total, 1,200,000 passengers were rried 1,985,000,000 passenger-miles on scheduled flights. Operating revenues for the ar reached $134,000,000, an advance of 25 p.c. over 1968; revenues from charter operations se spectacularly from $300,000 in 1968 to $6,100,000 in 1969, while passenger revenues se from $88,000,000 to $107,000,000.

CP Air's network radiates from the company's systems headquarters at Vancouver, rving Japan and Hong Kong over the Great Circle North Pacific Route; Holland over ie Polar Route via Calgary and Edmonton; Honolulu, Fiji and Australia via the South acific Route; the Azores, Holland, Portugal, Spain, Italy and Greece via Toronto and Iontreal on the North Atlantic Route; Mexico, Peru, Chile and Argentina via Montreal nd Toronto on the South American Route; and regular West Coast flights between San rancisco, Hawaii and Vancouver. The airline's operations in the Far East are extremely nportant to Canada's relations with the developing nations in that area. Within Canada, P Air transcontinental air services link Vancouver, Edmonton, Calgary, Winnipeg, oronto, Ottawa and Montreal, and the company also operates interior services in British olumbia, Yukon Territory and northern Alberta.

CP Air became an all-jet airline in 1969, operating 20 aircraft—seven Boeing 737s, ie Boeing 727, 11 DC-8s and one DC-3.

egional Airlines

Regional airlines comprise five domestic companies (Eastern Provincial Airlines, ordair, Pacific Western Airlines, Quebecair and Transair-Midwest), which provide rth-south scheduled services linking Canada's northern regions with the metropolises the south. In addition to their scheduled services, the five regional airlines operate arter air services within Canada as well as between Canada and other countries.

Eastern Provincial Airways (1963) Ltd.—This company is the regional carrier for ie Atlantic Provinces. In 1969 it carried 162,000 revenue passengers 61,000,000 passenger-iles, and 7,495 tons of freight 3,000,000 ton-miles. Operating revenues were $11,800,000,) p.c. higher than the 1968 revenues of $9,100,000. Scheduled services are operated to harlottetown and Summerside in Prince Edward Island; Moncton–Chatham and Charlo New Brunswick; New Glasgow and Halifax in Nova Scotia; Deer Lake–Stephenville–rner Brook, Gander, St. John's and St. Anthony in Newfoundland; Goose Bay, Wabush–abrador City and Twin Falls–Churchill Falls in Labrador; and Montreal, Sept Îles and ie Magdalen Islands in Quebec. In addition to its scheduled services lifting passengers nd freight in the four Atlantic Provinces and in eastern Quebec, the airline provides air rvices for mineral exploration, hunting and fishing, forestry and ambulance, seal and ice atrol, aerial photography and for other purposes, thus making a significant contribution the development of areas in Canada relatively inaccessible by surface transport.

The company's mainline fleet comprises three Boeing 737s; three Handley Page Dart eralds; one DC-4; two Convairs; and four DC-3s; its bushline fleet consists of five PBY ansos; six DH Beavers; six DH Otters; two DH Twin Otters; one Beech Baron; and two per Super Cubs.

Nordair Ltée-Ltd.—Nordair with head office at Dorval, Que., was established in 957 by the merger of Mont Laurier Aviation and Boreal Airways. Since its formation,

Nordair has enjoyed a steady expansion and operates scheduled services in Quebec, Ontari and in the Northwest Territories, as well as extensive domestic and international charte flights throughout Canada and from Eastern Canada to the southern United States an Caribbean islands.

Scheduled services are operated between Montreal and Hamilton, between Montre and Great Whale and Fort Chimo in Quebec, and Frobisher Bay and Resolute Bay in th Northwest Territories. Nordair also maintains an extensive air service based at Frobishe Bay in the Northwest Territories supplying numerous Arctic settlements in the Baffi Island area, such as Clyde River–Cape Christian, Broughton Island, Pangnirtung, Cap Dyer, Cape Dorset, Coral Harbour, Hall Beach, Igloolik and Pelly Bay. Application are now (mid-1970) before the Air Transport Committee to extend Nordair's services t Pittsburgh in Pennsylvania, Ottawa in Ontario and Alert in the Northwest Territories.

Nordair's charter flights accommodate inclusive tour travels and group travel Nordair's northern charter operations are based at Fort Chimo and Frobisher Bay fron which points a variety of aircraft, including DC-3s on skis, are available.

Nordair's fleet is composed of three Boeing 737-200Cs, five DC-3s, three C-46s, on DC-4, one Twin Otter and one Short Skyvan.

Pacific Western Airlines Ltd.—Pacific Western Airlines Ltd., with head offic at Vancouver International Airport, operates over more than 11,000 route-miles; its service include scheduled mainline local regular unit toll and charter flights in British Columbia Alberta, the Northwest Territories and Saskatchewan.

Regularly scheduled mainline services are operated north-bound from Edmonton t Prince George, Prince Rupert, Dawson Creek (B.C.); Peace River, Fort McMurray Rainbow Lake, Fort Chipewyan (Alberta); Uranium City (Saskatchewan); Fort Resolu tion, Hay River, Fort Smith, Fort Simpson, Wrigley, Norman Wells, Inuvik, Yellowknife Cambridge Bay and Resolute (Northwest Territories). The only no-reservations-required AirBus service in Canada operates daily between Calgary and Edmonton in Alberta. On the Pacific Coast, mainline services are operated from Vancouver to Comox, Powell River Campbell River and Port Hardy. In the interior region of British Columbia, Pacific Western operates scheduled services from Vancouver to Kelowna, Penticton, Cranbrook Kamloops and through to Calgary in Alberta. The company also operates international charter passenger services. Large aircraft charters are operated from major centres of Vancouver, Edmonton and Calgary. Pacific Western operates extensive freight services both scheduled and chartered into the Northwest Territories. Three Lockheed Hercules provide charter freight services throughout the free world.

In 1969, 701,000 revenue passengers were carried, revenue passenger-miles totalled 395,000,000 and cargo ton-miles 20,000,000. Aircraft miles flown were 10,000,000. Comparable figures for 1968 were 427,000, 226,000,000, 10,000,000 and 6,000,000, respectively.

Aircraft operated by Pacific Western number 23, including two Boeing 707s, three Boeing 737s, four Convair 640 jet-props, three Lockheed Hercules (freight), six DC-6s, three DC-4s and two DC-3s.

Quebecair.—Quebecair, with head office at Montreal, offers scheduled services in Quebec and Labrador. The company dates from 1946 and was founded under the name "Le Syndicat d'Aviation de Rimouski". In 1947, the name was changed to Rimouski Airlines and the company inaugurated an air transport service between the shores of the Gulf of St. Lawrence, linking Matane, Mont Joli, Rimouski, Forestville, Baie Comeau and Sept Îles. Until 1953, service was limited to towns and small centres located between Rimouski and Gaspé on the south shore of the St. Lawrence River and between Forestville and Sept Îles on the north shore. In 1953, with amalgamation of Gulf Aviation, the name "Quebecair" was adopted. With the expansion of mining and industrial activities, it

nded its network to Quebec City and Schefferville in 1955, to Montreal in 1957, to non and Rivière du Loup in 1959, to Wabush in 1960, to Manicouagan and Saguenay 961 and to Murray Bay in 1962. During 1965, Quebecair acquired Northern Wings ted and Northern Wings Helicopters Limited and merged their scheduled services. 967, Quebecair acquired A. Fecteau Transport Aérien Ltée, thus extending its opera- to the Abitibi region and eastern bank of Hudson Bay. Quebecair was purchased e end of July 1968 by Sogebry Ltée, a Montreal private holding company.

Quebecair is responsible for the operation of the scheduled services and the subsidiaries le flights by light aircraft, charter and contract services. Scheduled services are ated over 6,000 miles serving some 43 localities in nine economic regions of Quebec Labrador. Points linked are Montreal, Quebec City, Murray Bay (Charlevoix), Comeau (Hauterive), Churchill Falls (Twin Falls), Gagnon, Wabush (Labrador City), gan, Mont Joli–Rimouski, Rivière au Tonnerre, Saguenay (Bagotville), Schefferville, Îles, Senneterre, Mistassini, Temiscaming, Lac Doda, Lac Caché, Lac Mistassini, ert River, Fort George, Obedjiwan, Oskelaneo, Manouane, Val d'Or, Amos, Lebel-sur- illon, Rupert House, Chibougamau, Matagami, Blanc Sablon, Saint Paul, Old Fort St. Augustin, La Tabatière, Tête à la Baleine, Harrington Harbour, Gethsemani, aska, Natashquan, Aguanish, Baie Johan Beetz, and Havre St. Pierre. Quebecair operates group charters within Canada, to the United States and to the Caribbean, g 79 passenger jet aircraft.

Revenue passengers transported by Quebecair in 1969 numbered 211,000 for 79,000,000 nger-miles compared with 189,000 for 56,000,000 passenger-miles in the previous year; 00 tons of goods were hauled 13,400,000 ton-miles in 1969 compared with 2,200 tons 18,000 ton-miles in 1968. There was a substantial increase of 46 p.c. in operating nues in 1969 to $9,200,000 from $6,300,000 in 1968.

At the end of 1969 the combined fleet of Quebecair and subsidiaries totalled 50 units: BAC-1-11s, four F-27s, two DHC-6 Twin Otters, four DC-3s, one C-46, five DHC-3 rs, 12 DHC-2 Beavers, two Cessna 185s, seven Cessna 180s, seven Bell 47-G-4As, three hes 300s and one Hughes 500.

Transair-Midwest.—This company was formed in November 1969 through the merger ransair Limited and Midwest Airlines Ltd., both of Winnipeg. With headquarters he Winnipeg International Airport, the company operates scheduled services in itoba, Saskatchewan, Ontario and the Northwest Territories and charter flights ughout Canada and from Canada to the United States. The company's scheduled ces are operated in four areas: (1) the Prairies—from Winnipeg to Regina–Saskatoon– ce Albert and return; from Winnipeg to Yorkton and return; (2) Manitoba—from nipeg to The Pas–Flin Flon–Lynn Lake–Thompson and return; from Winnipeg to m–Churchill and return; from Winnipeg to Thompson–Churchill and return; from nipeg to Norway House and return; from Winnipeg to Brandon and return; from nipeg to Dauphin and return; (3) Eastern—from Winnipeg to Thunder Bay–Toronto return; from Winnipeg to Kenora–Dryden–Thunder Bay–Sault Ste Marie–Toronto return; from Winnipeg to Red Lake and return; and (4) Arctic—from Churchill to mo Point–Rankin Inlet–Baker Lake and return; from Churchill to Coral Harbour– ulse Bay–Hall Beach and return. Several other points in the Northwest Territories, ding Yellowknife, are also served by flights from Churchill.

The diversity of Transair-Midwest's aircraft fleet, which is comprised of 58 aircraft, ding 14 helicopters, supports the company's claim of being Canada's "most versatile" "most complete" airline. The fleet ranges from small, single-engined aircraft equipped wheels, skis or floats for access to remote hinterland and short-airstrip areas, to 34 multi- ne aircraft, including two Boeing 737 twin jets and four recently acquired Argosy 222 hters capable of carrying 28,500 lb. Most of the fleet is stationed at Winnipeg but a 4 and a C-47 are usually positioned at the company's major base at Churchill, Man., pport of its arctic and DEW-line operations. Since 1961, under contract with the

United States Air Force, Transair has operated, from Winnipeg and Churchill, the vert re-supply flights to the four main sites in the Canadian sector of the DEW-line in extreme Arctic.

Major company developments in 1969 were: (1) the merger of Transair Limited Midwest Airlines Ltd.; (2) the start of scheduled service from Winnipeg to Kenora–Dryd Thunder Bay and return which replaces the former service between Winnipeg and Thun Bay via Red Lake although Red Lake continues to be served by daily flights from Winnij (3) the revision of the company's northern Manitoba route system to provide service betw points on the two routes which were formerly entirely separate; and (4) a marked expans in the number of charters operated, one for the Admiral Richard E. Byrd Polar Cente several points in the high Arctic including a flight over the North Pole, being particul noteworthy.

During the first half of 1970, developments included: (1) receipt of two Boeing twin jets; (2) authority from the Air Transport Committee of the Canadian Transp Commission to inaugurate on Apr. 26, 1970, a daily Boeing 737 service from Winnipeg Thunder Bay–Toronto and return and a daily YS-11A service from Winnipeg to Keno Dryden–Thunder Bay–Sault Ste Marie–Toronto and return.

In 1969, Transair flew 4,090,550 miles and carried 180,000 passengers for 72,000,(passenger-miles, compared with 134,000 revenue passengers for 58,000,000 passenger-m in 1968; 9,500 tons of goods were hauled for 5,000,000 ton-miles as against 4,400 tons 3,000,000 ton-miles in 1968. Operating revenues of $8,500,000 in 1969 were 35 p.c. ab the revenue of $6,300,000 in 1968. Employees numbered 451, including 73 pilots.

Commonwealth and Foreign Scheduled Commercial Air Services

At the end of 1969, there were 29 Commonwealth and foreign air carriers holding va Canadian operating certificates and licences issued for the following international schedu commercial air services into Canada:—

Aeroflot, operating between Moscow (U.S.S.R.) and Montreal (Canada) in transit to New Yo

Aeronaves de Mexico, S.A., operating between Montreal and Toronto (Canada) and Mexico C (Mexico).

Air France (*Compagnie Nationale Air France*), operating between Paris (France) and Montr (Canada) and beyond to Chicago (U.S.A.) with traffic rights, and to other points beyc in transit to Los Angeles and New York.

Airwest Inc., operating between Calgary (Canada) and Spokane (U.S.A.).

Alaska Airlines Inc., operating between Ketchikan (U.S.A.) and Prince Rupert (Canada).

Alitalia (*Italian International Airlines*), operating between Rome and Milan (Italy) and Montr (Canada) and beyond to Chicago (U.S.A.) with traffic rights, and to other points beyc in transit.

Allegheny Airlines Inc., operating between Erie (U.S.A.) and Toronto (Canada).

American Airlines Inc., operating between Toronto (Canada) and New York/Newark (U.S. and between Chicago (U.S.A.) and Toronto (Canada), and between Los Angeles (U.S. and Toronto (Canada).

British Overseas Airways Corp., operating between London and Manchester (England), Prestwi (Scotland) and Montreal and Toronto (Canada), beyond Montreal with traffic rights Chicago and beyond in transit to Boston, New York and Detroit (U.S.A.) and betwe London (England), Prestwick (Scotland), Gander (Canada), Bermuda, Nassau, Monte Bay, Barbados and Trinidad.

BWIA (*British West Indian Airways*), operating between Port of Spain (Trinidad), Antig Barbados and Toronto (Canada).

Deutsche Lufthansa Aktiengesellschaft (*Lufthansa German Airlines*), operating between Germa and Montreal (Canada) and beyond in transit to Los Angeles (U.S.A.) and Mexico City.

Eastern Airlines, Inc., operating between the terminals Ottawa and Montreal (Canada), a New York (U.S.A.) and between the terminals Ottawa and Montreal (Canada), a Washington (U.S.A.) and between Tampa/Miami (U.S.A.) and Toronto (Canada) a between Buffalo (U.S.A.) and Toronto (Canada).

Iberia (*Lineas Aereas de España*), operating between Madrid (Spain), Montreal (Canada), Mexi City (Mexico) and Guatemala.

Irish International Airlines (*Aerlinte Aireann Teoranta*), operating between Shannon (Ireland) and Montreal (Canada) and beyond in transit to Chicago (U.S.A.).

Japan Air Lines Co. Ltd., operating between Tokyo (Japan) and Vancouver (Canada) and San Fransisco (U.S.A.).

KLM Royal Dutch Airlines, operating between Amsterdam (Netherlands) and Montreal (Canada) and beyond in transit to Houston (U.S.A.) and Mexico City (Mexico) and for cargo to New York (U.S.A).

Mohawk Airlines, Inc., operating between Toronto (Canada) and Buffalo (U.S.A.) and Rochester (U.S.A.) and Toronto (Canada) and between Burlington (U.S.A.) and Montreal (Canada).

North Central Airlines, Inc., operating between Thunder Bay (Canada) and Duluth/Superior (U.S.A.) and between Detroit (U.S.A.) and Toronto (Canada).

Northeast Airlines, Inc., operating between Montreal (Canada) and Boston (U.S.A.) via Concord, Montpelier-Barre, Burlington and White River Junction (U.S.A.) and between Tampa/Miami (U.S.A.) and Montreal (Canada).

Northwest Airlines, Inc., operating between Minneapolis (U.S.A.) and Winnipeg (Canada).

Olympic Airways, S.A., operating between Athens (Greece), Montreal (Canada) and New York (U.S.A.).

Qantas Empire Airways Ltd., operating between Sydney (Australia), San Francisco (U.S.A.) and Vancouver (Canada).

Sabena Belgian World Airlines, operating between Brussels (Belgium), and Montreal (Canada) and beyond in transit to New York (U.S.A.) and Mexico City (Mexico).

Scandinavian Airlines System, operating between Stockholm (Sweden), Bergen (Norway), Copenhagen (Denmark) and Montreal (Canada) and beyond in transit to New York and Chicago (U.S.A.).

Seaboard World Airlines, Inc., operating between points in the United States, Gander (Canada) and peints in Europe.

Swiss Air Transport Company Ltd. (*Swissair*), operating between Zurich and Geneva (Switzerland) and Montreal (Canada) and beyond in transit to Chicago (U.S.A.).

United Air Lines, Inc., operating between Vancouver (Canada) and Seattle (U.S.A.) and between Chicago (U.S.A.) and Toronto (Canada).

Western Air Lines, Inc., operating between Calgary (Canada) and Great Falls/Denver (U.S.A.) and between Los Angeles/San Francisco, Portland (U.S.A.) and Vancouver (Canada).

Wien Consolidated Airlines Inc., operating between Whitehorse, Y.T. (Canada) and Fairbanks and Juneau (Alaska, U.S.A.).

rsonnel Licences

At Mar. 31, 1970, the total number of personnel licences in force in Canada was 37,492, npared with 35,378 on the same date of 1969. The 1970 licences were constituted as ows, with comparable 1969 figures in brackets: glider pilots, 1,356 (1,190); private ots, 23,748 (22,824); commercial pilots, 4,677 (4,525); senior commercial pilots, 698 (544); ine transport pilots, 2,676 (2,206); flight navigators, 216 (210); air traffic controllers, (937); flight engineers, 95 (114); aircraft maintenance engineers, 3,074 (2,825); and ocopter pilots, 4 (3).

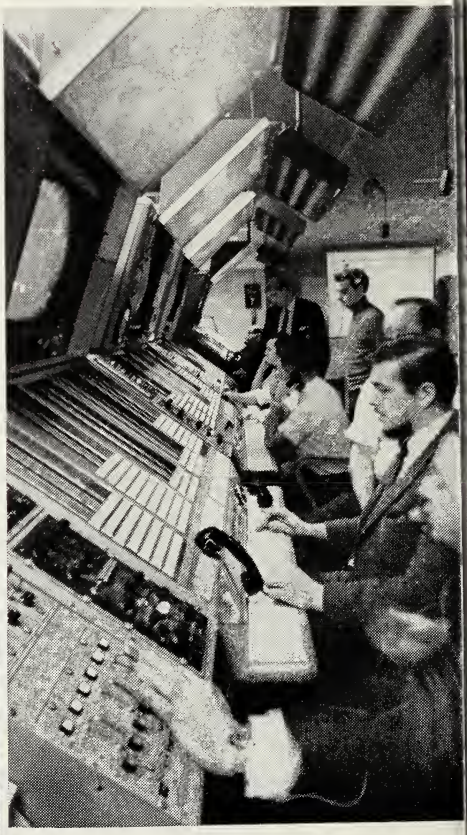
r Traffic Control

The primary functions of Air Traffic Control in the Ministry of Transport are to prevent lisions between aircraft operating within controlled airspace and between aircraft and structions on the manœuvring area of controlled airports, and to expedite and maintain afe, orderly flow of air traffic. These functions are carried out by Air Traffic Controllers ated in Airport Control Towers, Terminal Control Units and Area Control Centres. e services provided by these units are described below.

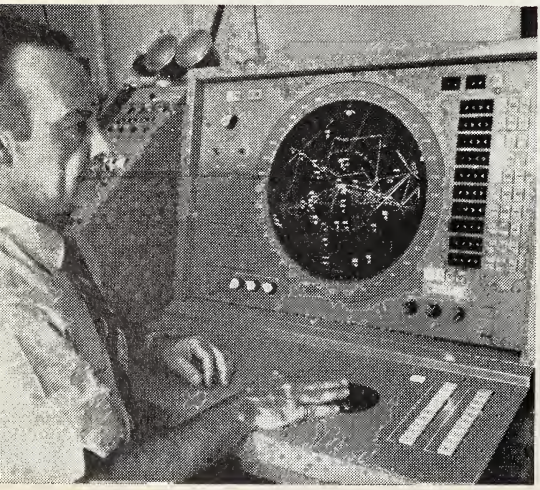
Airport Control Service is provided to aircraft operating on the manœuvring area or in close vicinity (5-10 nautical-mile radius) of civil airports where the volume and complexity of air traffic indicate its need in the interest of flight safety. Service is also provided to other traffic, such as vehicles and maintenance equipment, on the manœuvring a of an airport. Radio is the prime means of communication in the provision of the vice, although light signals may be used where radio is not available. Airport Control

Towers are in operation at: Gander International, St. John's, and Wabush (Labrado Newfoundland; Halifax International and Sydney in Nova Scotia; Fredericton, Mon and Saint John in New Brunswick; Baie Comeau, Cartierville, Montreal Internati Quebec, St. Hubert, St. Jean and Sept Îles in Quebec; Buttonville, Hamilton, Lon North Bay, Oshawa, Ottawa International, Sault Ste Marie, Thunder Bay, Tor International, Toronto Island, Waterloo–Wellington and Windsor in Ontario; Bran St. Andrews and Winnipeg International in Manitoba; Regina and Saskatoon in Sas chewan; Calgary International, Edmonton International, Edmonton Industrial, Lethbr and Springbank in Alberta; Abbotsford, Fort St. John, Kamloops, Penticton, Pitt Mead Port Hardy, Prince George, Vancouver International and Victoria International in Br Columbia; and Whitehorse in the Yukon Territory.

Canada's air traffic control facilities, although ranking in quality among the world's best, are in course of being automated and refined in response to advances in electronics and extended to overcome gaps in present coverage including the far northern areas. Installation of two systems, expected to be the nucleus of the total computerized nation-wide system, will be completed in 1971 on a test basis. It will provide for the 'remoting' of radars anywhere they are needed, eliminate the controller's manual operations and give instantly all information that could be needed on an aircraft in flight.



The Montreal area control centre showing flight strips recording flight information posted on the master boards. These must be updated constantly by the controllers, a time-consuming task subject to error.



Prototype of the new fully automated system, which will leave the controller free to manage aircraft in his control zone. When an aircraft moves from one radar screen to another, the operator can alert the new controller by making the aircraft blip on and off.

Terminal Control Service is provided to aircraft which are 'climbing out' after departure om or 'letting down' for a landing at an airport. It is a service provided to such flights perating in accordance with the Instrument Flight Rules in order to separate them from ne another and from en route aircraft operating through the Terminal Area which normally an airspace within 30-50 nautical miles of an airport and which, in some cases, may ncompass more than one airport. Radar is normally used, in conjunction with direct ntroller-pilot radio communication, in the provision of this service. Procedural means e used at some remote locations where radar is not yet available. The service is provided om all Area Control Centres but separate Terminal Control Units are installed at high affic density airports where no Area Control Centre is located. Such separate units ave been established at Halifax in Nova Scotia; Quebec City in Quebec; North Bay, Ottawa nd Thunder Bay in Ontario; Regina and Saskatoon in Saskatchewan; and Calgary in lberta.

Area Control Service is essentially an aircraft separation and flight-following service rovided to aircraft operating en route between airports. All flights that elect to file ight plans are given flight-following service, and separation is provided to all aircraft perating in accordance with the rules for instrument flight or controlled visual flight ithin designated controlled airspace, i.e., all airways below 23,000 feet above sea level ASL) and all airspace in Canada south of 70° North latitude above 23,000 feet ASL. In ddition, the service is provided north of 70°N to all aircraft operating above 29,000 feet SL, and to aircraft operating above 5,000 feet over almost all of the western half of the orth Atlantic Ocean. Separation is provided using both radar and procedural means, ith direct and indirect communication between controller and pilot. An extensive land-ne communication system links an Area Control Centre with all affiliated Airport Control owers, Terminal Control Units and communication stations and with adjacent Area ontrol Centres in Canada and adjoining States, as well as with other agencies providing ipporting and auxiliary services or having a need to deal directly with the centre, i.e., air arrier operation agencies, military operation agencies, etc. Additional services provided y Area Control Centres are:

Aircraft Movement Information Service which assists the Department of National Defence in establishing the identification of all aircraft operating in specified areas.

Customs Notification Service which facilitates the notification of the appropriate customs agency by pilots planning to cross the Canada-United States border at certain designated customs airports. This service is provided when requested by a pilot in his flight plan.

Alerting Service which ensures that the appropriate search and rescue organization is notified of an aircraft which may be in need of its aid.

Flight Information Service which provides pilots with advice and information useful for the safe and efficient conduct of flight, including weather reports and forecasts, field condition reports, data concerning aids to navigation, traffic information and other information of use to the pilot in planning and conducting a flight.

rea Control Centres are located at Gander in Newfoundland; Moncton in New Brunswick; Iontreal in Quebec; Toronto in Ontario; Winnipeg in Manitoba; Edmonton in Alberta; nd Vancouver in British Columbia.

Airspace Reservation Service provides reserved airspace for specified operations within ontrolled airspace and information to other pilots concerning these reservations and mili-ary activity areas in controlled and uncontrolled airspace. The Airspace Reservation oordination Office, located in Ottawa, is responsible for provision of the service in all the irspace of Canada and in the Gander Oceanic Control Area.

Ground Facilities

Canadian aerodromes are listed in Table 2, classified by administrative agency as censed or unlicensed land facilities or seaplane bases, or military aerodromes. Licensed erodromes are those that are inspected by Ministry of Transport inspectors at regular

intervals and meet specific standards. In addition to aerodromes, a network of radio aid to navigation is maintained to facilitate en route navigation and safe landings unde instrument conditions.

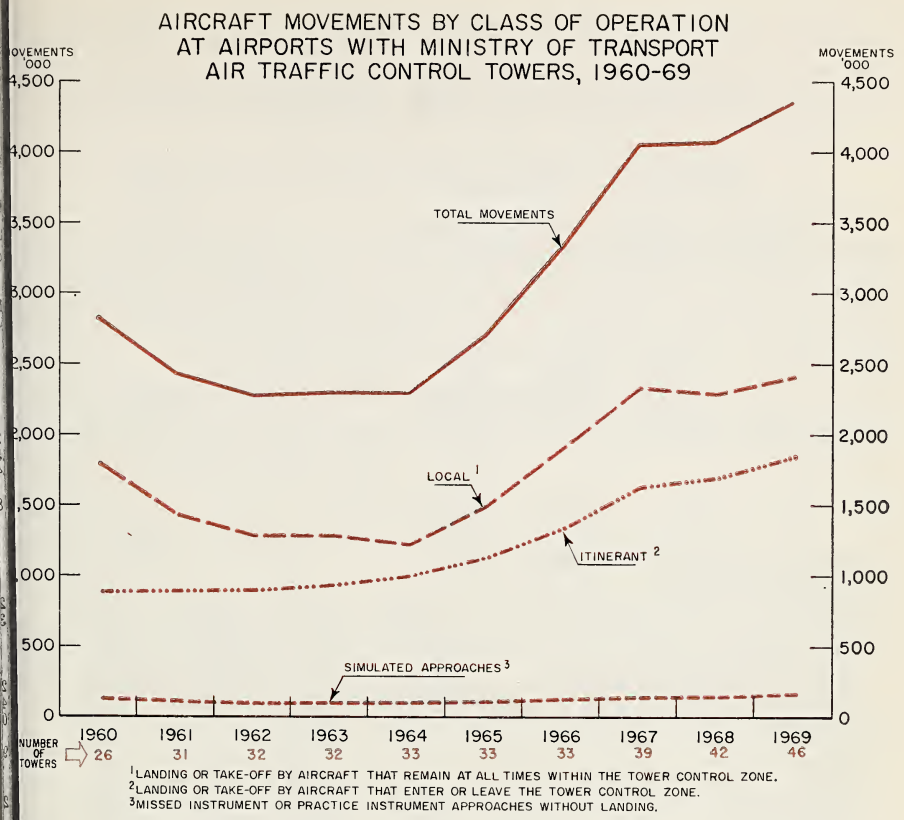
2.—Aircraft Landing Areas classified by Type of Facility and Operator, by Province, as at April 1970

Type of Facility and Operator	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	N.W.T.	Y.T.	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Licensed Airports—													
Ministry of Transport	3	1	3	3	10	17	4	4	7	18	13	3	8
Municipal	2	—	1	5	33	27	9	20	31	20	1	4	15
Private	3	1	3	5	30	49	6	10	18	9	1	1	13
Heliports—													
Ministry of Transport	—	1	1	1	—	—	—	—	—	—	—	—	
Private	—	—	—	—	6	11	1	—	2	16	2	1	3
Unlicensed Airports—													
Ministry of Transport	1	—	—	—	4	3	1	—	—	9	6	3	2
Municipal	4	—	2	—	10	1	2	33	78	20	2	4	15
Private	3	1	3	8	23	37	34	86	51	76	15	3	34
Abandoned or operator unknown	5	—	1	1	9	21	4	6	4	20	13	3	8
Heliports	—	—	—	—	—	1	—	—	—	2	—	—	
Licensed Seaplane Bases—													
Ministry of Transport	—	—	—	—	—	—	—	—	—	5	1	—	
Municipal	—	—	1	—	3	12	—	1	1	8	1	2	2
Private	4	—	2	1	80	91	46	26	1	55	30	3	33
Unlicensed Seaplane Bases—													
Ministry of Transport	—	—	—	—	1	—	—	—	—	25	—	—	2
Municipal	—	—	—	—	—	29	1	3	9	4	—	1	4
Private	9	—	—	2	20	21	15	1	4	25	9	—	10
Abandoned or operator unknown	8	1	2	4	6	14	15	7	8	10	16	5	9
Military Aerodromes—													
DND (land)	1	1	2	2	3	7	5	1	3	1	1	—	2
DND (seaplane)	—	—	1	—	—	1	—	—	—	1	1	—	
U.S. Navy	1	—	—	—	—	—	—	—	—	—	1	—	
U.S. Air Force	1	—	—	—	—	—	—	—	—	—	17	2	2
Totals, All Aerodromes	**45**	**6**	**22**	**32**	**238**	**342**	**143**	**198**	**217**	**324**	**130**	**35**	**1,732**
Land Bases	**21**	**4**	**14**	**23**	**125**	**167**	**61**	**159**	**191**	**190**	**53**	**22**	**1,030**
Seaplane Bases	**21**	**1**	**5**	**7**	**110**	**167**	**77**	**38**	**23**	**132**	**57**	**11**	**649**
Military Aerodromes	**3**	**1**	**3**	**2**	**3**	**8**	**5**	**1**	**3**	**2**	**20**	**2**	**53**

Airport Activity.—In 1969, aircraft movements at the 159 airports reporting such movements totalled 5,850,000, of which 1,326,000 were reported by airports without control towers and 4,488,000 by the 51 airports with towers operated by the Ministry of Transport (see p. 945). Of the latter, the 46 airports with Ministry of Transport towers registered 4,325,000 aircraft movements and the five Department of National Defence airports reported 163,000 movements.

The following chart shows the growth of aircraft movements at airports with Ministry of Transport towers during the decade ended in 1969.

For the second consecutive year, Toronto International Airport led in itinerant activity. Montreal International Airport retained second place after leading from 1964 to 1967; the exceptionally high movements at Montreal in 1967 were attributable to the influx of visitors to Expo 67. Vancouver and Winnipeg International Airports occupied third and fourth positions, respectively, in 1969, unchanged since 1965, and Ottawa was in fifth place, having replaced Cartierville which held that place from 1965 to 1968.


AIRCRAFT MOVEMENTS BY CLASS OF OPERATION
AT AIRPORTS WITH MINISTRY OF TRANSPORT
AIR TRAFFIC CONTROL TOWERS, 1960-69
MOVEMENTS '000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
TOTAL MOVEMENTS
LOCAL 1
ITINERANT 2
SIMULATED APPROACHES 3
1960 1961 1962 1963 1964 1965 1966 1967 1968 1969
NUMBER OF TOWERS 26 31 32 32 33 33 33 39 42 46
1 LANDING OR TAKE-OFF BY AIRCRAFT THAT REMAIN AT ALL TIMES WITHIN THE TOWER CONTROL ZONE.
2 LANDING OR TAKE-OFF BY AIRCRAFT THAT ENTER OR LEAVE THE TOWER CONTROL ZONE.
3 MISSED INSTRUMENT OR PRACTICE INSTRUMENT APPROACHES WITHOUT LANDING.

Rankings of the five leading airports in itinerant movements for 1965, 1967 and 1969 e:—

International Airport	1965 Rank	1965 Itinerants	1967 Rank	1967 Itinerants	1969 Rank	1969 Itinerants
		No.		No.		No.
Toronto	2	99,958	2	141,477	1	165,426
Montreal	1	107,255	1	151,202	2	148,027
Vancouver	3	84,879	3	124,748	3	142,120
Winnipeg	4	74,787	4	106,776	4	114,161
Ottawa	7	62,845	6	82,705	5	93,194

At the Ministry of Transport airports with air traffic control towers, aircraft weighing than 4,000 lb. accounted for 46 p.c. of the itinerant movements in 1969 and those ghing over 39,000 lb. for 30 p.c. Aircraft in the heaviest weight group (over 314,000 recorded a phenomenal growth from 41 itinerant movements in 1965 to 4,027 in 1967 to 29,666 in 1969.

In 1969, international movements rose 8.4 p.c. over 1968 to reach 199,089 and 41.5 of them were reported by Toronto and Montreal International Airports. Toronto dled 66,892, of which 59,343 were "transborder" (to and from the United States) and 9 were "other international" (to and from points outside Canada and the United es). Montreal International reported 49,645 international movements, of which 41 were transborder and 14,404 were other international.

During 1969, airports without towers, of which there were 108, handled 1,362 movements, 6.8 p.c. fewer than the 1,462,000 movements reported by the 102 airp in the 1968 survey. Itinerant movements were 397,000, up 12.1 p.c. over the 354,00 1968, and local movements, which were mainly training flights, numbered 965,000, p.c. fewer than the 1,108,000 movements in the previous year.

Section 3.—Civil Aviation Operation Statistics

In Table 3 the statistics in respect of commercial air services in Canada for the pe 1965-69 relate to foreign airlines (including those of the United States and to Cana airlines that earned annual gross flying revenues of over $100,000 in 1965-68 and $150,000 in 1969. The figures for Canadian airlines cover both domestic and internati operations; the data for foreign airlines cover miles and hours flown only over Cana territory and exclude passengers and goods in transit through Canada.

3.—Summary Statistics of Commercial Air Services, 1965-69

NOTE.—Most of the figures in this table are from the audited annual reports of commercial air carriers; w preliminary figures have been used there are occasionally slight variations from the audited figures but the d of error is less than 1 p.c.

Item		1965	1966	1967	1968	196
		'000	'000	'000	'000	'00
Canadian Carriers, Revenue Traffic Only—						
Unit Toll Transportation—[1]						
Departures	No.	270	300	344	401	..
Hours flown	"	335	377	448	487	
Miles flown	"	86,334	100,159	123,838	139,393	14
Passengers carried	"	5,939	6,737	8,157	8,429	
Passenger-miles	"	4,731,305	5,606,619	6,935,143	7,525,660	8,17
Cargo and excess baggage ton-miles	"	88,228	111,563	128,039	177,139	21
Mail ton-miles	"	21,772	24,844	28,725	30,716	3
Cargo and excess baggage	tons	74	91	95	118	
Mail carried	"	25	25	28	30	
Bulk Transportation—[2]						
Departures	No.	281	321	336	380	
Hours flown	"	320	376	398	428	
Miles flown	"	30,904	34,900	36,654	42,138	5
Passengers carried	"	631	724	791	876	
Passenger-miles	"	464,826	393,594	392,104	643,969	1,30
Goods ton-miles	"	13,507	12,759	13,330	18,265	6
Freight carried	tons	54	63	60	76	
Other Flying Services—[3]						
Hours flown	No.	126	188	256	244	
Canadian Carriers, All Services						
Revenue Traffic—						
Departures	No.	552	621	680	781	..
Hours flown	"	782	940	1,101	1,158	
Miles flown	"	117,238	135,059	160,493	181,531	19
Passengers carried	"	6,570	7,462	8,948	9,305	1
Passenger-miles	"	5,196,131	6,000,213	7,327,247	8,169,629	9,48
Goods ton-miles	"	123,508	149,166	170,095	226,121	31
Goods carried	tons	153	179	183	224	
Non-revenue Traffic—						
Hours flown	No.	30	43	45	43	
Passenger-miles	"	224,746	254,033	290,276	405,322	..
Goods ton-miles	"	7,996	8,650	8,746	9,488	..
Fuel consumed	gals.	249,337	292,926	348,328	397,609	44
Oil consumed	"	395	456	482	499	
Average employees	No.	19	21	25	27	
Salaries and wages paid	$	129,775	151,138	186,902	214,643	24
Operating revenues	$	392,807	460,556	543,610	716,377	70
Operating expenses	$	368,208	429,795	516,076	576,529	66
Canadian and Foreign Carriers, All Services—						
Hours flown	No.	801	963	1,129	1,188	
Miles flown	"	124,448	143,589	171,195	192,891	21
Passengers carried	"	7,839	9,024	11,596	11,875	1
Goods carried	tons	173	207	218	269	

[1] Transportation of passengers or goods at a toll per unit. [2] Transportation of passengers or goods at per mile or per hour for the entire aircraft. [3] Comprises flying training, aerial photography, and aerial p and inspection.

Table 4 gives comparative figures of domestic and international traffic in 1969; for verage, see text preceding Table 3.

4.—Comparative Statistics of Domestic and International Traffic, 1969

NOTE.—Figures in this table are preliminary and subject to a degree of error of less than 1 p.c.

Item		Canadian Airlines		Foreign Airlines		Total
		Domestic Services	International Services	United States	Other Foreign	
		'000	'000	'000	'000	'000
it Toll Transportation,[1] Revenue Traffic nly—						
Departures	No.	..	51	..	..	..
Hours flown	"	355	134	9	24	521
Miles flown	"	91,872	56,403	2,896	9,276	160,447
Passengers carried	"	6,751	2,402	2,284	594	12,031
Passenger-miles	"	4,422,889	3,751,152	118,807	499,926	8,792,774
Goods ton-miles	"	119,900	130,459	1,568	24,172	276,099
Goods carried	lb.	212,756	99,528	52,556	69,317	434,157
k Transportation,[2] Revenue Traffic Only—						
Departures	No.	381	8	..	..	..
Hours flown	"	454	24	—	—	479
Miles flown	"	40,967	10,027	37	405[3]	51,436
Passengers carried	"	770	341	11	65	1,187
Passenger-miles	"	110,230	1,199,495	..	..	..
Goods ton-miles	"	38,561	26,648	..	..	..
Freight carried	lb.	233,608	4,958	..	1,929	..

[1] Transportation of passengers or goods at a toll per unit. [2] Transportation of passengers or goods at a per mile or per hour for the entire aircraft. [3] Hours and miles flown are those flown only over Canada.

5.—Expenditure and Revenue of the Ministry of Transport in connection with Air Services, Years Ended Mar. 31, 1967-69

Item	1967	1968	1969
	$	$	$
Expenditure			
Transport Board	**934,350**	**500,261**[1]	[1]
Services Administration	**2,884,416**	**4,828,463**	**5,409,434**
struction Engineering and Architectural Branch, Administration	**5,003,516**	**5,742,940**	**6,357,586**
Aviation Branch	**21,864,860**	**25,574,010**	**29,482,342**
Control of Civil Aviation	7,741,178	9,872,153	10,540,434
Air Traffic Control	12,128,357	13,136,561	15,871,293
Payments to other governments or international agencies for operation and maintenance of airports and airways facilities	282,085	317,052	257,651
Contributions to assist in the establishment or improvement of local airports and related facilities	948,914	1,356,361	1,908,455
Subsidies toward operation of municipal and other airports	184,687	218,839	219,509
Grants to organizations for development of civil aviation	579,639	665,000	685,000
Exchequer Court Awards	—	8,044	—
orts and Field Operations Branch	**28,892,106**	**33,490,194**	**39,963,994**
ommunications and Electronics Branch	**30,154,515**	**33,726,046**	**28,341,931**
Radio Aids to Air and Marine Navigation	25,771,227	28,904,984	28,341,931
Radio Act and Regulations	4,208,241	4,519,521	—
Payment to CNR *re* deficit telecommunication facilities	175,047	301,541	—
orological Branch	**24,197,715**	**25,543,986**	**26,967,797**
Totals, Expenditure	**113,931,478**	**129,405,900**	**136,523,084**
Revenue and Receipts			
ervices Administration	**9,971**	**13,568**	**1,725**

[1] As at Sept. 20, 1967, the Air Transport Board was consolidated under the Canadian Transport Commission.

5.—Expenditure and Revenue of the Ministry of Transport in connection with Air Services, Year Ended Mar. 31, 1967-69—concluded

Item	1967	1968	1969
	$	$	$
Revenue and Receipts—concluded			
Construction Engineering and Architectural Branch	3,351	2,157	
Civil Aviation Branch	256,371	301,539	717,9
Aviation personnel licences	68,370	79,298	223,7
Airport licence fees	6,007	8,144	12,6
Aircraft registration and airworthiness certificates	101,175	113,600	298,5
Fines, Aeronautics Act	4,332	7,413	7,1
Air Traffic Control Division	2,701	6,906	—
Miscellaneous	57,557	68,660	130,9
Refunds of previous years' expenditure	16,229	17,518	44,9
Airports and Field Operations Branch	26,352,852	32,806,807	40,799,6
Aircraft landing fees	12,087,524	15,221,123	17,364,9
Aircraft parking and handling	168,612	231,124	309,8
Joint user terminal facilities charge	684,902	1,018,486	2,920,2
Land rental	739,502	823,369	1,000,2
Office and shop rental	2,456,020	2,538,865	2,879,5
Other rentals (living quarters, hangar space, equipment, restaurants, etc.)	1,183,981	1,222,442	1,953,6
Concessions (gasoline and oil, taxi, restaurant, telephone, car rentals, parking, etc.)	7,058,549	9,202,871	11,831,4
Sales (land, buildings, water, gasoline and oil, heat, power, etc.)	905,689	977,359	1,185,5
Car parking meters	297,901	233,518	270,8
Observation roof-turnstiles	155,063	175,384	157,6
Mess receipts	110,428	185,305	270,7
Sanitary fees (garbage disposal)	39,966	43,238	29,3
Registration fee—mobile equipment	100,229	167,701	137,9
Sundry services, sundries and miscellaneous	284,753	398,005	406,8
Refunds of previous years' expenditure	79,733	368,017	79,9
Telecommunications and Electronics Branch	5,095,337	4,992,260	3,672,1
Air-ground radio services	1,438,457	1,787,409	2,772,1
Radio message tolls	322,214	346,189	322,2
Private commercial broadcasting station licence fees	1,990,479	1,664,661	—
Radio operators' examination fees	7,359	8,202	—
Radio station licence fees	738,298	568,301	—
Rentals—living quarters	370,346	358,005	396,5
Other rentals	65,512	53,156	64,7
Sales (land, buildings, power, publications, etc.)	56,331	78,768	26,4
Miscellaneous	69,853	112,118	73,4
Refunds of previous years' expenditure	36,488	15,451	16,5
Meteorological Branch	215,171	177,567	202,5
Totals, Revenue and Receipts	31,933,053	38,293,898	45,394,1

PART V.—OIL AND GAS PIPELINES*

Oil Pipelines.—Since the late 1940s large capital expenditures have been m each year for oil pipeline construction. In 1969 they were estimated at $52,600,000 were forecast at $25,500,000 for 1970, raising the estimated cumulative total for the pe 1950-70 to $1,001,900,000.

The prime components of the network of Canadian oil pipelines are the trunk l of the Interprovincial Pipe Line Company and the Trans Mountain Oil Pipe Line C pany. The bulk of domestic crude oil is carried in these lines. Refineries that do rely on these systems are located in the oil producing regions such as Calgary and Edm ton. The Interprovincial system carries crude oil eastward from Edmonton, receiv and discharging oil at various locations along its length. The Trans Mountain sys operates similarly westward from Edmonton. Supplying these two trunk lines are p

* Prepared in the Mineral Resources Branch, Department of Energy, Mines and Resources, Ottawa.

e systems funnelling oil from hundreds of fields into storage tanks at the pipeline ter-nals. Some of these feeder lines are impressive in themselves, not only in size of pipe d in length of route but in the volumes of oil that they transport. Most of the feeder es are in Alberta, which is to be expected because of the pre-eminent position of that vince in oil production.

The main pipeline terminal at Edmonton has 10 crude oil feeder lines, including the erprovincial extension to Redwater, as follows:—

Pipeline	*Total System Length*	*Capacity*	*General Area of Supply Related to Edmonton*
	miles	bbl./day	
Canadian Industrial Gas and Oil Ltd.	82	15,000	southeast
Federated Pipe Lines Ltd.	529	175,000	northwest
Great Canadian Oil Sands Limited	266	50,000	north-northeast
Gulf Alberta Pipe Line Company Limited	410	40,000	south-southeast
Imperial Pipe Line Co. Ltd.	378	72,000	southwest
Interprovincial Pipe Line Co.	31	110,000	northeast
Peace River Oil Pipe Line Co. Ltd.	1,240	95,000	northwest
Pembina Pipe Line Ltd.	931	154,000	west-southwest
Rainbow Pipe Line Company, Ltd.	605	110,000	northwest
Texaco Exploration Company	173	111,000	south

In addition, three pipelines are connected to the Interprovincial at Hardisty, some) miles southeast of Edmonton. Here, Gibson Associated Oil Ltd. makes deliveries up to 15,000 bbl. daily of oil from fields just south of the pipeline terminal. Husky e Line Ltd. operates a multiple-line system in which one line is used to transport con-nsate from Hardisty to mix with the heavy, asphaltic crude found at Lloydminster. e condensate-crude blend is returned to Hardisty through an eight-inch line, and a v 10-inch line which was completed in 1969. Total capacity of these lines is 72,000 . daily. The third pipeline connection, Bow River Pipe Line Ltd., carries crude from most southerly oilfields in Alberta, near Taber; this line has a capacity of 27,000 bbl. ly. Home Oil Limited operates a pipeline serving refineries in the Calgary area with from fields north of the city; the line also has connections with the Rangeland pipeline ich, in turn, is linked to the Texaco line going north to Edmonton. o serving Calgary is the oldest pipeline in Alberta operated by Valley Pipe Line Com-ny, which carries crude from the historically important Turner Valley in quantities up 15,000 bbl. daily.

The Trans Mountain pipeline has a second receiving terminal in Alberta at Edson ere the Peace River pipeline makes deliveries to Trans Mountain from fields to the th. In British Columbia, the Western Pacific Products and Crude Oil Pipelines Ltd. ries crude over a distance of 500 miles from fields near Fort St. John in northeastern tish Columbia to the Trans Mountain pipeline at Kamloops; this line has a capacity 6,500 bbl. daily.

Three main pipeline systems carry crude oil from Saskatchewan fields to the Inter-vincial pipeline. The largest is the Westspur Pipe Line Company-Producers Pipelines . network, with a capacity of 175,000 bbl. daily, which delivers crude from the important theast Saskatchewan producing area to the Interprovincial terminal at Cromer, Man., also carries crude delivered to it by Trans-Prairie Pipelines Ltd. from fields in the dale area of southeast Saskatchewan. In 1969, Producers Pipelines built a 56-mile in southwestern Saskatchewan to connect the new Plato oilfield with Interprovincial Kerrobert. The South Saskatchewan Pipe Line Company, with a capacity of 115,000 . daily, takes medium-gravity crude from fields near Swift Current in southwest Sas-chewan to the Interprovincial pipeline at Regina. The third system is the mid-Sas-chewan pipeline of Royalite Oil Company, which has a capacity of 10,000 bbl. daily carries crude oil from the Coleville–Dodsland area to the Interprovincial terminal at rrobert.

The Manitoba System of Trans-Prairie Pipelines Ltd. is the only pipeline in Manit serving the producing fields in the general area of Virden. It carries crude to the In provincial terminal at Cromer and has a capacity of 27,000 bbl. daily.

Interprovincial Pipeline.—The system of Interprovincial Pipe Line Company Canada's longest oil pipeline. It incorporates the wholly owned subsidiary in the Uni States, Lakehead Pipe Line Company Incorporated, and has a right-of-way length 2,025 miles including a 95-mile lateral to Buffalo, New York. In a major expans program undertaken in 1969, 170 miles of 34-inch pipeline were added in Western Cana thus completing three complete lines between Edmonton and Superior, Wisconsin. addition, 290 miles of 30-inch line were laid from the Chicago area to Sarnia, ther providing two pipelines from Superior to Sarnia, one north of Lake Michigan and to the south. The pipeline can deliver 30 grades of crude oil. Year-end capacities of various sections of the pipeline are shown below for 1969 and for 1970.

Section	1969	1970
	bbl./day	bbl./day
Edmonton–Regina	633,000	1,001,000
Regina–Cromer	823,000	873,000
Cromer–Gretna	862,000	1,027,000
Gretna–Superior	821,000	983,000
Superior–Sarnia via Straits of Mackinac	536,000	538,000
Superior–Chicago	204,000	331,000
Chicago–Sarnia	—	306,000
Sarnia–Port Credit	281,000	287,000
Westover–Buffalo	79,000	90,000

Interprovincial serves 34 refineries: three at Edmonton; one at Lloydminster via Husky pipeline; one at Saskatoon via Saskatoon pipeline from Milden; one at Mo Jaw via B-A Saskatchewan pipeline from Stony Beach; two at Regina; two at Winnip via Winnipeg pipeline from Gretna, 17 in the United States either directly or throu connecting carriers; three at Sarnia; two at Oakville; one at Clarkson; and one at P Credit.

Trans Mountain Pipeline.—The system of Trans Mountain Oil Pipe Line Compa extends from Edmonton to Vancouver via Jasper and has a right-of-way length of 7 miles, including a section of 57 miles in the United States which belongs to a wholly own subsidiary of Trans Mountain. Trans Mountain serves eight refineries: one at Kamloo four at Vancouver; and three in the Puget Sound region of Washington State. Un a contract with Gulf Oil Canada Limited, facilities were completed at the Vancou terminal to handle storage and transfer of liquid propane from railway tank cars to refr erated Japanese tankers. First loading under the 10-year contract was made in Octo 1966, and in 1969, 3,276,000 bbl. were delivered to tankers. Capacity of various segme of the system at the end of 1968 were:—

Section	1968	Section	1968
	bbl./day		bbl./day
Edmonton–Edson	310,000	Sumas–Ferndale	220,000
Edson–Kamloops	285,000	Sumas–Anacortes	235,000
Kamloops–Sumas	335,000	Sumas–Burnaby	335,000

Montreal–Portland Pipeline.—The Montreal refinery centre is served by a 236-m pipeline which is a joint system of Montreal Pipe Line Company and its wholly own subsidiary in the United States, Portland Pipe Line Corporation. This line takes delive of tanker-borne crude from Venezuela, the Middle East and Africa at Portland, Mai In 1965, the company completed a 24-inch pipeline alongside the existing 18-inch a 24-inch crude oil lines. An additional 24-inch line was completed under the St. Lawre River in 1967 to serve the refineries in Montreal and, at the same time, 16- and 20-in lines were installed for future use. Present capacity of the system is 504,000 bbl. dai

Product Pipelines.—Traditionally, a product pipeline carries refined products from refineries to truck terminals in large consuming centres. However, with the growth natural gas processing in Canada, which results in large volumes of products such as ppane, butane and pentanes plus being produced, a new type of product line has emerged ich carries these products to markets or to refineries.

There are three product lines in Eastern Canada, all supplying markets in Ontario h refined petroleum products. Two pipelines, Sun-Canadian Pipe Line Company l Sarnia Products Pipe Line, run from refineries at Sarnia to bulk plants in London, milton and Toronto. Trans Northern Pipe Line Company, once a pipeline carrying ducts from Montreal to markets in Ontario as far west as Hamilton, now has a two-way w. Products from Montreal are now delivered only in the area east of Brockville, luding the Ottawa Valley; products from refineries west of Toronto are carried eastward far as Kingston.

In Western Canada, the Petroleum Transmission Company pipeline carries propane, tane and pentanes plus from a plant at Empress in Alberta to Winnipeg in Manitoba, listance of 578 miles. The predominant product carried is propane which is also mark-d at various locations along the line. Elsewhere in Alberta, the Rimbey Pipe Line mpany transports condensate from the Rimbey gas plant and takes deliveries from Rangeland condensate pipeline to serve areas north of Calgary as far as Edmonton. so going to Edmonton from the Leduc gas conservation plant are three pipelines owned Nisku Products Pipe Line Company Ltd., one each for propane, butane and pentanes s. Near Calgary, Home Oil Company operates a condensate pipeline to serve refineries re and also to make deliveries to the Rangeland condensate pipeline. In 1969, a 186-e, 8-12-inch pipeline was built by Dome Petroleum Limited to transport mixed natural s liquids from the Alberta Natural Gas Company's new gas reprocessing plant at Coch-e to Interprovincial's Edmonton terminal. The liquids will be transported to plants Superior, Wis., and Sarnia, Ont., where they will be fractionated into propane, butane l other products for use in the surrounding market areas. There are other condensate elines in Alberta, most of which are associated primarily with production and do not ve end-users.

Pipeline Tariffs.—Typical of the charges to move crude oil are the following pipeline iffs:—

	Charge	*Distance*
	cts./bbl.	miles
Edmonton to Vancouver	40.0	718
Edmonton to Regina	20.7	438
Edmonton to Winnipeg	32.7	847
Edmonton to Sarnia	48.0	1,743
Edmonton to Port Credit	51.0	1,899
Portland to Montreal	10.5	236

Natural Gas Pipelines.—Natural gas now accounts for about 19 p.c. of Canada's rgy requirements and, in addition, large volumes are delivered to markets in the United tes. Relatively small amounts of natural gas have been transported in other areas he world as a liquid under refrigeration, and this method was utilized for the first time Canada in 1967 to supply gas to the distribution system of the town of Squamish, B.C. wever, most of the gas used in Canada, as well as in North America as a whole, is moved pipeline. There is an extensive network of pipelines serving most centres of population m Vancouver to Montreal and delivering gas to several points of export on the United tes border.

Since the mid-1950s when large-volume gas removal was authorized from Alberta, ital expenditures in gas pipeline construction have constituted a significant proportion he country's total outlay for transportation facilities. In 1969, capital expenditures of 9,000,000 were made and forecast expenditures for 1970 amounted to $345,100,000,

bringing the cumulative expenditures for the period 1955-70 to an estimated $1,934,500,0 for gathering and transmission systems, with an additional $1,217,700,000 for distributi systems.

Pipelines are usually categorized under three headings—gathering lines, transmissi lines and distribution lines. The gathering lines are those that take gas from the we or separators to the field gate or some other specified point. Transmission lines are n mally the large-diameter pipelines that take gas from gathering lines and deliver it to t distributors principally at the 'city gate'. In total, there were 54,942 miles of all typ of gas pipeline in operation at the end of 1969, of which 6,549 miles were gathering, 17,1 miles were transmission, and 31,196 miles were distribution.

Unlike oil pipeline companies which are common carriers that transport oil for fixed charge, gas pipeline companies, with few exceptions, own the gas that is transporte The principal exception is the Alberta Gas Trunk Line Company which delivers virtual all of the gas exported from Alberta to the provincial boundary where main transmissi companies accept delivery. This is an important exception because most of the Canadi gas reserves are in Alberta. The Alberta Gas Trunk system contains 2,778 miles pipeline.

Some details of the main transmission systems are contained in the following par graphs. Like oil pipelines, there are two trunk lines serving Canada. One is the Tran Canada Pipe Lines Limited system and the other is that of Westcoast Transmission Cor pany Limited.

Trans-Canada Pipe Lines Limited.—The Trans-Canada pipeline, originating at th Alberta border near Burstall, Sask., follows a route eastward to a point near Winnipe Man., where it branches into two lines. One continues eastward into Ontario throug Thunder Bay, then arches through the clay belt before swinging south via North Bay Toronto, where one branch goes westward into Ontario and another follows the shore Lake Ontario and the St. Lawrence River to Montreal and the United States border. number of lateral lines extend from the main transmission line to serve communities alor the route. The second line from Winnipeg goes south to the United States boundary Emerson where it connects with the Great Lakes Gas Transmission Company systen which is jointly owned by Trans-Canada and an American company. This pipelin follows a route south of Lake Superior through the Straits of Mackinac and east of Lak Michigan to reconnect with the Trans-Canada system at Sarnia, Ont. The Trans-Canad system is Canada's longest pipeline, having a total mileage of 3,638 miles including loo lines. The maximum daily gas delivery through the system in 1969 was 2,298,000 Mc Export sales averaged 428,000 Mcf. daily.

Westcoast Transmission Company Limited.—The supply of gas for Westcoast come mainly from fields in northeastern British Columbia but significant quantities are gathere in northwestern Alberta. The main line from Fort St. John runs in a southerly directio to Vancouver and to the United States border at Sumas, B.C. An extension to its syste from the Fort St. John area to the Fort Nelson area permits the pipeline system to pic up gas from the main areas stretching from Dawson Creek to the Kotcho Lake area, nort east of Fort Nelson. Total pipeline in the Westcoast system exceeded 1,400 miles in 196

Alberta Natural Gas Company.—Although the Alberta Natural Gas pipeline is onl 107 miles long, it forms a vital link in a major gas export scheme which carries Canadia gas as far south as California. The pipeline connects with Alberta Gas Trunk pipelin at Crowsnest Pass on the Alberta border and extends across southeastern British Columbi to the international border near Kingsgate where it meets the Pacific Gas Transmissio Company system, which transports the gas in the United States.

Other Gas Pipelines.—There are many other natural gas pipelines operating in Canad Some systems are devoted exclusively to gathering gas in producing fields, while other receive gas from the main transmission lines and distribute it to gas customers. Severa

ge systems combine elements of gathering, transmission and distribution. Among e larger systems, Inland Natural Gas Co. Ltd. distributes gas to a number of centres interior and southern British Columbia. In west-central British Columbia, the Pacific rthern Gas Ltd. pipeline services communities and industries along a 435-mile route ween the Westcoast main line at Prince George and the Pacific Coast cities of Prince pert and Kitimat. Canadian Western Natural Gas Company Limited and North-stern Utilities, Limited serve markets in central and southern Alberta with a total of re than 7,200 miles of pipeline. The Saskatchewan Power Corporation delivers all gas d in Saskatchewan; the 5,968-mile system transports and distributes gas to most of the pulated areas of Saskatchewan. The Northern and Central Gas Corporation Limited s probably the most geographically widespread distribution system in Canada, as it tributes gas to industries and communities adjacent to the Trans-Canada system from nnipeg as far east as the Montreal area. Two large utility companies serve the highly pulated and industrialized areas of southern Ontario. The Consumers' Gas Company erates in the Toronto area, the Niagara peninsula and eastern Ontario while the Union s Company of Canada, Limited serves the southwestern corner of the province. These d many other systems make up the growing network of gas pipelines which serves domes-commercial and industrial customers in all provinces except Prince Edward Island, va Scotia and Newfoundland.

Oil Pipeline Statistics.*—There were 45 oil pipeline companies operating in Canada the end of 1969. Pipeline deliveries shown in Table 1 were made to non-pipeline riers, foreign pipelines, and terminals including refineries and distributing centres.

1.—Pipeline Movements of Oil, 1966-69

Item	1966	1967 r	1968	1969
	bbl.	bbl.	bbl.	bbl.
Receipts				
de Oil and Pentanes Plus—				
Canadian	344,853,598	376,466,430	407,395,598	444,514,275
Imports	112,389,899	115,712,556	133,353,477	142,584,753
iefied Petroleum Gases and Products—				
Canadian	78,509,586	80,739,717	86,655,118	88,647,238
Imports	406,824	777,045	1,695,561	1,142,133
Totals, Net Receipts	**536,159,907**	**573,695,748**	**629,099,754**	**676,888,399**
Deliveries				
de Oil and Pentanes Plus—				
Canadian	329,186,093	336,877,897	365,771,371	381,576,598
Exports	126,591,959	150,601,709	169,032,483	202,534,888
iefied Petroleum Gases and Products—				
Canadian	75,035,182	78,396,933	84,380,794	84,947,050
Exports	3,169,153	3,213,579	3,785,007	5,052,811
Totals, Net Deliveries	**533,982,387**	**569,090,118**	**622,969,655**	**674,111,347**

Revenue and employee data shown in Table 2 are not complete; both revenue and ployee figures have been omitted for some companies, since pipeline operation forms y a part of the activities of these establishments and the data are not separable. Daily rage of net deliveries by trunk lines in 1969 was 1,846,880 bbl.; trunk lines barrel miles ounted to 319,983,661,000 and the average miles per bbl. to 475; other data for 1969 e not available at the time of printing.

* Statistics of oil pipelines are given in greater detail in the DBS monthly report *Oil Pipe Line Transport* (Cata-e No. 55-001).

2.—Operating and Financial Statistics of Oil Pipelines, 1966-68

Item		1966	1967	1968
Pipeline Mileage—				
Trunk lines	No.	8,681	9,622	10,20
Gathering lines	"	4,314	4,533	4,56
Daily Av. of Net Deliveries—				
Trunk lines	bbl.	1,455,059	1,559,151	1,702,10
Gathering lines	"	881,537		
Barrel Miles—				
Trunk lines	'000	228,125,498	255,065,842	282,529,27
Av. Miles per Barrel—				
Trunk lines	No.	429	448	45
Property account	$	723,038,574	781,599,987	842,865,43
Long-term debt	$	344,162,634	333,417,502	342,697,61
Operating revenues	$	160,180,889	176,330,320	184,730,34
Operating expenses	$	38,139,905	42,557,614	45,582,85
Net income (after income tax)	$	55,593,017	59,958,766	57,573,57
Av. employees	No.	1,437	1,543	1,45
Salaries and wages	$	11,512,205	13,067,526	13,218,73

Gas Pipeline Statistics.—As already stated, the natural gas transport indus became a significant factor in the Canadian economy in 1957 with the completion of t first of several extensive pipelines constructed to transport natural gas from the field processing plant to distribution outlets. Consequently, the distribution industry a greatly increased deliveries to consumers from that time. Table 3 illustrates this exp sion for the years 1966-69.

3.—Receipts and Disposition by Natural Gas Utilities, 1966-69

Item	1966	1967[r]	1968	1969
	Mcf.	Mcf.	Mcf.	Mcf.
Receipts				
Transport system	858,625,620	950,653,601	1,091,493,113	1,290,673,
Distribution systems	247,969,783	266,478,233	292,336,054	315,795,
Imports	44,606,905	70,462,853	81,554,075	34,935,
Other	22,397	68,882	490,805	883,
Totals, Net Receipts	1,151,224,705	1,287,663,569	1,465,874,047	1,642,288,
From storage	35,485,236	47,767,513	55,727,387	65,024,
Totals, Supply	**1,186,709,941**	**1,335,431,082**	**1,521,601,434**	**1,707,312,**
Disposition				
Sales to ultimate consumers	635,514,622	695,106,183	766,004,594	844,713,
Exports	431,818,191	513,231,383	604,445,221	680,109,
Other	2,781,338	1,018,769	6,801,914	13,297,
Totals, Net Deliveries	1,070,114,151	1,209,356,335	1,377,251,729	1,538,119,
To storage	52,550,350	52,663,942	57,757,675	66,300,
Line pack fluctuation	366,229	−362,352	2,749,246	3,621,
Gas used in system	50,353,672	55,449,312	62,403,117	75,325,
Line losses and unaccounted amounts	13,325,539	18,323,845	21,439,667	23,945,
Totals, Demand	**1,186,709,941**	**1,335,431,082**	**1,521,601,434**	**1,707,312,**

PART VI.—GOVERNMENT PROMOTION AND REGULATION OF TRANSPORTATION

The Federal Government plays a twofold role in the development of transportation vices. One is the promotional role, ensuring the growth and development of the kind ransportation appropriate to the times; the other is a regulatory role, including economic ulation of rates and services and also technical regulation to meet safety requirements l for other purposes. Examples of promotion are the building of canals from the time Confederation to the recent constructing of the St. Lawrence Seaway, the underwriting railway development and branch-line extension, the establishment of Air Canada, the ge investments in airports and aeronautical installations, and the building of the Trans-nada Highway.

The Ministry of Transport and the various Crown agencies reporting to Parliament ough the Minister of Transport have jurisdiction over canals, harbours, shipping, civil ation and interprovincial and international railways. Interprovincial or international elines for carrying gas, crude oil or petroleum products are under the jurisdiction of National Energy Board. Jurisdiction over for-hire interprovincial or international hway transport also rests with the Federal Government but these powers are at present rcised by the provincial highway transport boards under the federal Motor Vehicle nsport Act of 1954.

Railway regulation was developed in a period when railways enjoyed a virtual nopoly of transport in the country. Measures to protect the public against excessive rges, unjust discrimination and other objectionable monopoly practices, together with asures to ensure safe operations, have over the years subjected railways to the most prehensive regulation of any Canadian industry. In the intervening years the rapid wth of road, air and pipeline services has ended the railway monopoly for a large part he total traffic available and has placed the railways in a highly competitive situation.

A Royal Commission was appointed in 1959 to inquire into the railway rate structure other problems. Its findings indicated a need to shift from regulating monopoly to ntaining a balance between the several competing modes of transport. Legislation ed on the findings of the Royal Commission was passed by Parliament and received val Assent on Feb. 9, 1967. The statute, called the National Transportation Act, nes a national transportation policy for Canada looking to the achievement of an nomic and efficient transportation system making the best use of all available modes of nsportation at the lowest total cost. It established the Canadian Transport Com-sion to carry out the functions formerly performed by the Board of Transport Com-sioners for Canada, the Air Transport Board and the Canadian Maritime Commission. ddition, the Act creates a framework within which the pipeline carriage of commodities er than oil and gas and the interprovincial and international motor transport under-ings can be regulated by the Canadian Transport Commission.

The general purpose of the Act is to create a situation in which the development of transportation industry and the protection of the public against excessive or discrimi-ory charges are accomplished in the main by competition between modes rather than regulation and control. The railways are relieved of some of the more onerous and dated restrictions on their freedom to meet competition. On the other hand, a shipper has no practical alternative to rail shipment can apply to have a maximum rate fixed his goods by the new Commission. The Act also provides a procedure to allow the ways, under safeguards for the public interest, to abandon lines and withdraw passenger ices where they are no longer needed.

The Canadian Transport Commission.—The Commission, created by the ional Transportation Act (SC 1967, c. 69), was organized on Sept. 19, 1967 and ceeded to all the powers and duties of its predecessors, the Board of Transport Commis-ers for Canada, the Air Transport Board and the Canadian Maritime Commission. Commission is a court of record. It consists of a maximum of 17 members, of whom

one is president and two are vice-presidents. One of the vice-presidents is charged w the superintendence of the work of the committees of the Commission and the othe charged with the superintendence of the programs of study and research of the Commissi For the purpose of performing its duties the Commission must establish committees, a of which may, in accordance with the rules and regulations of the Commission, exer the powers of the Commission. Three of these committees—the Railway Transp Committee, the Air Transport Committee and the Water Transport Committee—are present functioning in respect of these several modes of transport. The finding determination of the Commission upon any question of fact within its jurisdiction binding and conclusive and no order or decision may be questioned or reviewed except appeal to the Supreme Court of Canada upon a question of law or a question of jurisdict with leave of that Court, or by the Governor in Council. However, a party to an appli tion for a licence under the Aeronautics Act or the Transport Act may appeal to Minister of Transport from a final decision of the Commission.

The Commission has jurisdiction under more than a score of Acts of Parliame including the Railway Act, the Aeronautics Act and the Transport Act, over transpor tion by railway, by air and by inland water, and over communication by telephone a telegraph.

Railway Transport.—Under the Railway Act the jurisdiction of the Commission stated generally, in respect of construction, maintenance and operation of railways t are subject to the legislative authority of the Parliament of Canada, including matt of engineering, location of lines, crossings and crossing protection, safety of train operati operating rules, investigation of accidents, accommodation for traffic and facilities service, abandonment of operation and uniformity of railway accounting. The Comm sion also has certain jurisdiction over telephones and telegraphs, including regulation the telephone tolls of Bell Canada and over tolls for the use of international bridges a tunnels.

Except for certain statutory rates, and subject to certain powers of the Commiss to deal with rates that it finds to be contrary to public interest, the railways are free charge rates as they wish. However, rates must be compensatory, and the Commiss may prescribe tolls for captive shippers if such tolls take undue advantage of a monop situation favouring the railways.

Air Transport.—The Commission is responsible for the economic regulation of c mercial air services in Canada and is also required to advise the Minister of Transp in the exercise of his duties and powers in all matters relating to civil aviation. T regulatory function relates to Canadian air services within Canada and abroad and foreign air services operating into and out of Canada. It involves the licensing of such services and the subsequent regulation of the licensees in respect of their econo operation and the provision of service to the public. The Commission issues regulati dealing with the classification of air carriers and commercial air services, accounts, reco and reports, traffic tolls and tariffs, and various other matters. All regulations, rules a orders issued by the former Air Transport Board continue in force until repealed or amend by the Canadian Transport Commission.

On Oct. 20, 1966, the Minister of Transport tabled in the House of Commons "Statement of Principles for Regional Air Carriers", which assigns to the Commission t responsibility for initiating measures to implement the policy set out therein. In t connection, the Commission has under review the route structures of regional air carri

The Commission takes an active part in the work of the International Civil Aviati Organization and, when appropriate, undertakes bilateral negotiations for the exchan of traffic rights. At present, Air Canada and CP Air are Canada's designated interr tional scheduled carriers.

Water Transport.—Under the Transport Act, the Commission entertains applicatio for licences for ships to transport goods or passengers for hire or reward between places

nada on the Great Lakes and on the Mackenzie and Yukon Rivers, except goods in k on waters other than the Mackenzie River. Before granting a licence, the Commis- n must be satisfied that public convenience and necessity require such transport. The mmission also has regulative powers over tolls for such transport.

Shipping Subsidies.—The Canadian Transport Commission also administers subsidies d by the Federal Government for the maintenance of certain coastal and inland water pping services. Table 1 shows the net amount of steamship subventions paid in con- tion with contracts made for the maintenance of essential coastal and inland water pping services in the years ended Mar. 31, 1968 and 1969.

1.—Steamship Subventions, Years Ended Mar. 31, 1968 and 1969

Service	1968[r]	1969
	$	$
stern Local Services—		
Gold River and Zeballos, B.C.	28,940	33,480
Vancouver and northern British Columbia ports	270,000	393,800
Vancouver and west coast of Vancouver Island, B.C.	130,000	130,000
tern Local Services—		
Burnside and St. Brendans, Nfld.	14,500	15,000
Carmanville and Fogo Island, Nfld.	27,500	40,000
Cobb's Arm and Change Islands, Nfld.	17,500	10,750
Dalhousie, N.B., and Miguasha, Que.	37,500	37,500
Grand Manan and the mainland, N.B.	259,000	259,000
Greenspond and Badger's Quay, Nfld.	53,750	27,000
Halifax, N.S., and Cupids, Nfld.	40,000	40,000
Halifax, N.S., and St. John's, Nfld.	263,639	281,500
Île aux Coudres and Les Éboulements, Que.	35,900	70,500
Île aux Grues and Montmagny, Que. (summer)	6,500	9,000
Île aux Grues and Montmagny, Que. (winter)	1,700	1,700
Îles de la Madeleine, Que., Cheticamp and Halifax, N.S.	35,000	35,000
Îles de la Madeleine and Montreal, Que.	100,000	130,000
Montreal, Que., and Botwood, Nfld.	95,600	95,600
Montreal, Quebec, Rimouski and north shore ports to Blanc Sablon, Que.	770,000	770,000
Mulgrave, Canso and Arichat, N.S.	52,400	—
Newfoundland Coastal Steamship Services	6,829,914	7,690,352
Owen Sound and Manitoulin Island, Ont.	185,700	201,905
Pelee Island and the mainland, Ont.	88,695	88,695
Pictou, N.S., Charlottetown (Souris), P.E.I. and Îles de la Madeleine, Que.	304,160	389,900
Portugal Cove and Bell Island, Nfld.	267,925	265,234
Prince Edward Island and Newfoundland	108,600	102,900
Prince Edward Island and north shore of St. Lawrence River, Que.	35,000	35,000
Prince Edward Island and Nova Scotia	870,699	912,624
Rivière du Loup and St. Siméon, Que.	21,000	21,000
St. Lawrence River and Gaspé ports to Chandler, Que.	43,000	43,000
Sorel and Île St. Ignace, Que.	43,000	43,000
Twillingate and New World Island, Nfld.	63,400	63,400
Totals	**11,100,521**	**12,236,840**

The National Energy Board.—The National Energy Act (SC 1959, c. 46) pro- med Nov. 1, 1959, provided for the establishment of a five-member Board charged h the duty of assuring the best use of energy resources in Canada. In the performance his function, the Board is responsible for the regulation of the construction and opera- n of the oil and gas pipelines that are under the jurisdiction of the Parliament of Canada, tolls charged for transmission by oil and gas pipeline, the export and import of gas and export of electric power, and the construction of the lines over which such power is nsmitted. The functions and operations of the Board are covered in the Domestic ade and Prices Chapter of this volume, Part II, Section 4.

CHAPTER XX.—COMMUNICATIONS

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

Section 1.—Telecommunications

Subsection 1.—Telecommunications Media*

Communications media in Canada have been shaped to meet the needs of the countr Great networks of telephone, telegraph, radio and television facilities, inextricably bou together, provide adequate and efficient service which, in this era of electronic advancemer is under continual technological change and development. The familiar challenges of t country—its size, its topography, its climate, its small population—which have rear their heads in other areas of development, have had to be faced as well in the field of te communications. That these have been met is evidenced by the fact that today Cana possesses communications facilities and services which are second to none in the world a which are somewhat unique in structure. On the one hand there is a group of telepho companies acting in concert to provide national services and on the other there are tv railway companies providing services, each of which is national in scope. These compani provide a most comprehensive total telecommunications network and almost all Canadia from the Arctic Coast to the 49th parallel and from St. John's in Newfoundland to Va couver in British Columbia can communicate with each other and with the rest of the wor by the simple action of twisting a dial or pushing a button. Messages are carried by micr wave, tropospheric scatterwave systems, land lines and high frequency radio bands. T great advancement in telecommunications during the past few years indicates that machin to-machine communications will, within a very short time, surpass the volume of man-t man communications. The use of computers is becoming more and more commonpla and the ability to transmit computer data from one location to any distant location acr the country is a tremendous boon to industry and commerce and a benefit to every Canadia

The vital importance of telecommunications to Canada was recognized in the creati of the federal Department of Communications in 1969. This brought together into a sing ministry the Telecommunications Policy and Administration Bureau (formerly with t Department of Transport), the Defence Research Telecommunications Establishment, t

*Revised by Canadian National Telecommunications, Ottawa.

nadian Overseas Telecommunication Corporation and the Canada Post Office. Initially, e Department has concerned itself with a comprehensive inquiry into all aspects of nada's information system. This "Telecommission" study, as it nears completion, is oviding the Department with guidance for the formulation of national communications licies and programs.

Public Telephone Service.—Telephone service, local and long-distance, is provided telecommunications companies serving a total of almost 10,000,000 telephones across nada. The largest serving organization is the Trans-Canada Telephone System comising eight telephone companies, either privately or publicly owned—the Newfoundland lephone Company Ltd., the Maritime Telegraph and Telephone Company Ltd., The ew Brunswick Telephone Company Limited, Bell Canada, the Manitoba Telephone stem, Saskatchewan Telecommunications, Alberta Government Telephones and the itish Columbia Telephone Company. In addition, there are almost 1,900 independent lephone companies providing private service in smaller communities across the country, any of which link into the Trans-Canada Telephone System for world-wide telephone cess. Each company has a monopoly within its own territory and is subject to government gulations at the appropriate level—federal, provincial or municipal.

CN Telecommunications, the largest single telecommunications system in Canada on e basis of area served, provides telephone service for residents in the Yukon and Northest Territories, in parts of Newfoundland, and in northern sections of British Columbia. all, there are some 35,000 subscribers on the CNT telephone network. Without exception, all CNT exchanges are of the automatic dial type. Subscribers in the Far North ve access to the outside world via CNT-operated long-distance toll centres at Whitehorse, T., Fort Nelson, B.C., and Hay River and Inuvik, N.W.T. In some areas, such as the ackenzie River delta, short-haul long-distance calls are handled by automatic toll ticketing milar to that used by the large telephone companies in the major southern Canadian ntres. A $3,000,000 expansion program in Newfoundland will include 10 new telephone changes, extensions of 22 existing exchanges and the expansion of transmission facilities; any isolated settlements now have as modern a telephone service as any in Canada.

The latest telephone innovation is the electronic switching system and the touch-tone lephone, developed in the United States. The dial is replaced by push-buttons, each of hich, when pressed, emits a tone that activates the exchange to contact the desired party. ectronic exchanges are now being used in many areas by the Trans-Canada Telephone stem and CN-CP Telecommunications are using a similar touch-tone application in eir Broadband Exchange Service (see p. 965).

Public Telegraph Service.—Canada's telegraph systems are operated by CN-CP lecommunications. These companies operate telegraph offices, often amalgamated, in 10 provinces and in the Yukon and Northwest Territories, and messages can be sent to d from any point in Canada or throughout the world via the overseas cable services ee pp. 979-980). At one time, much of the CNT and CPT revenue came from telegraph essage traffic but the proportion now accounted for by such traffic is only about 20 p.c. ven so, the reduced telegraph message traffic is handled by the most up-to-date facilities. essages are transmitted by teleprinter and facsimile equipment, and telegraph networks er which public messages flow are controlled by computers. In other words, messages e taken in and forwarded automatically in accordance with special programs stored in e computer's memory. The computer determines where the message is to be sent and nds it as soon as the circuits are free.

A recent experiment by CNT using cathode ray tube displays (CRT) in Toronto oved so successful that CRT display units were installed during 1970 at the larger centres Edmonton, Winnipeg, Ottawa, Quebec City, Saskatoon, Moncton and Halifax. Even-

tually, units will be installed in all medium-sized centres and the Toronto centre w be expanded to include four more displays, bringing the total to 16. Basically, Cl displays have television-like screens placed above a keyboard similar to a typewriter whi is connected to the message switching computer. As the operator receives a telephon telegram message, she types it on the keyboard and it appears on the screen at the sa time. She is able to read the message back to the caller and, with editing capabilities bu into the displays, may make changes to the text if required. When the message is c firmed, the push of a button sends it into the message switching computer for transmissi to its destination.

The cathode ray tube display system is being installed in all the large and medium-sized centres across Canada. A telegram message typed on the keyboard shows up on the screen and the push of a button sends the message on to its destination.

Telex Service.—Telex, by far the largest teletypewriter service in Canada, is provid by CN-CP Telecommunications. Its network of 20,000 subscribers in Canada interco nects with the Western Union Telex network in the United States and with European a world-wide networks of more than 372,000 subscribers. Telex is a direct distance di teleprinter system which permits a subscriber to directly dial any other subscriber on t network. Two speeds are offered to customers—66 words a minute and 100 words a minu —at costs determined on a time-used and distance basis; there is no minimum charge.

TWX, similar to Telex, is provided by the major telephone companies. One transm sion speed of 100 words a minute is offered on this service, the network of which consists some 2,700 subscribers in Canada and interconnects with the American Telephone a Telegraph network of some 50,000 TWX subscribers and also with the European and worl wide Telex network outside the North American network.

A medium-speed Telex service is offered exclusively by CN-CP Telecommunication operating in the speed range of up to almost 300 words a minute. The subscriber may ow his computer or data sending-receiving equipment or may lease it from CN-CP. Th service provides a direct dial interconnection with subscribers anywhere in Canada achieve a medium-speed range transfer of data from one location to another. The month rates to subscribers are the same as the stand-speed Telex service, that is, are based on tim used and distance. A six-level code, an eight-level code and punched computer cards ca operate on the medium-speed service.

Broadband Exchange Service.—In 1967, CN-CP Telecommunications introduced automatic switching system of the most advanced design, known as Broadband Exchange rvice, which has moved Canada into a new era of extremely high quality and very rapid mmunications. It is the first such system to operate in Canada and the second in the rld. Broadband has more than tripled the fastest conventional machine-to-machine nsmission. Furthermore, it has the capability, upon customer demand, of transmitting mputer data at 51,000 words a minute, or more than 50 times faster than the top speed ched by conventional switched networks. The Royal Canadian Mounted Police was e first organization to be tied into this supersonic network, using it for intricate and high-ality transmission of fingerprints, photographs and documents between headquarters Ottawa and divisional headquarters at Montreal, Toronto, Winnipeg, Edmonton, Regina, ncouver, Fredericton, Halifax and St. John's.

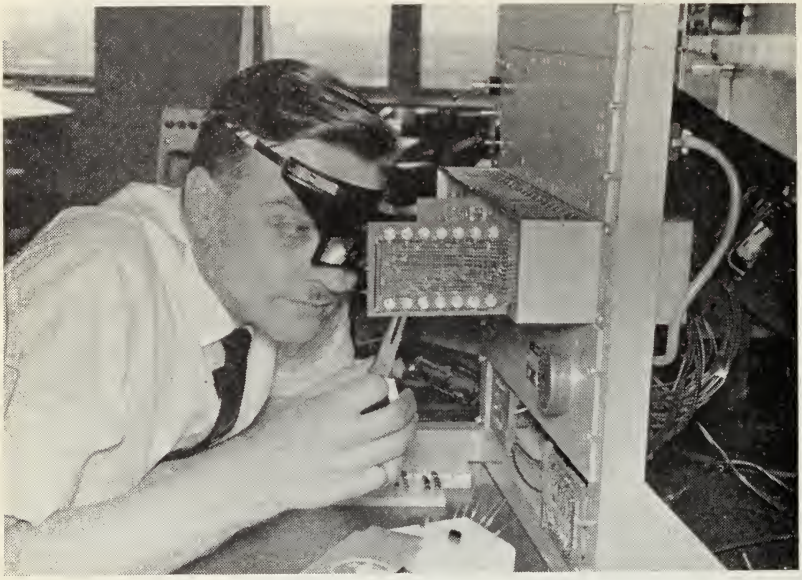
The name, Broadband Exchange Service, is derived from the actual system since oscribers eventually will be able to select various bandwidths, depending upon their mmunications needs. The broader the bandwidths, the faster the speed of transmission. N-CP will offer four bandwidths: four and eight kilocycles for voice, facsimile and data om 1,000 to 3,000 words a minute); 16 kilocycles for high fidelity radio program transmis-n and facsimile; and 48 kilocycles for high speed computer-to-computer data exchange 1,000 words a minute) and high speed facsimile. The four-kilocycle bandwidth is now erational and the other bandwidths will become available upon customer demand.

Transmission is carried by the CNT-CPT microwave system using frequency diversity chniques to provide a high degree of reliability. In other words, the transmission is rried twice both ways over different circuits at the same time, one being the back-up stem for the other.

Each subscriber has in his office a voice-data subset—a most advanced telephone strument which, with the flick of a button, can change from voice communication to nsmission of computer data. The subset features push-button "dialling" and the stomer, to reach a distant point, simply pushes the buttons in a series of seven digits. e first three digits pressed designate the distant exchange, the fourth digit indicates the sired bandwidth and the last three digits are for the line of the desired party. A re-ring tton is included so that the customer may signal the distant party to revert to voice mmunication during or after sending computer data. A feature of Broadband is abbre-ted keying, where customers may contact frequently called stations by pushing a two-git code instead of the normal seven. Broadband will make distant connections, including ying time, within five seconds, or two seconds on the special "hot line" service. Actual nnection time after keying or "dialling" is less than two seconds. Another feature of oadband is conference calling, where a subscriber, by pushing a two-digit code, will tomatically contact a pre-determined list of parties needed for the conference. Sub-ibers are charged on a "pay-as-you-use" basis.

Multicom Service.—This Service, offered by the Trans-Canada Telephone System ginning in 1969, is a medium-to-high-speed data transmission system designed for the ta processing industry. It transmits data at a variety of speeds from 2,400 to 50,000 bits econd—or as high as 60,000 words a minute. Transmission speeds can be increased as e need becomes evident. The data may be prepared in the form of either punched cards, nched paper tape, magnetic tape, disc storage or facsimile for optical scanning. As in oadband Exchange Service, the caller presses the first three numbers to identify the ving office and the class of service. The last four digits identify the station being called. e initial system is made up of three high-speed switching centres at Calgary, Toronto d Montreal and five medium-speed switching centres at Vancouver, Calgary, Winnipeg, ronto and Montreal. These switching centres are located in existing telephone switching ntres but are more sophisticated than the regular telephone exchanges.

Data-Phone Service.—The major Canadian telephone systems operate Data-Phone rvice which transmits data from punched cards, tape or magnetic tape between two or



Communicatio cuitry is now logic and a may be a mi purity requir attention of tronic engi

more machines or computers. It takes pulses from punched cards or tape-data machi and transforms them into tones which are sent over telephone circuits or leased priv lines. The subscriber pays for the line used at regular long-distance rates. Data-Pho transmits at a speed of 1,200 bits a second or 1,000 words a minute.

Data-Line Service.—Data-Line Service was put into operation by the Trans-Cana Telephone System in late 1968, primarily for customers who wished to be connected to tim sharing computers. Using the normal telephone lines and exchanges, this service has t capability of transmitting computer data from 1,000 words a minute to a new offering 1969 of 50,000 words a minute. The subscriber may use his own send-and-receive equi ment or he may lease the equipment from the Trans-Canada Telephone System. Charg are based on a flat rate and depend upon the bandwidth used.

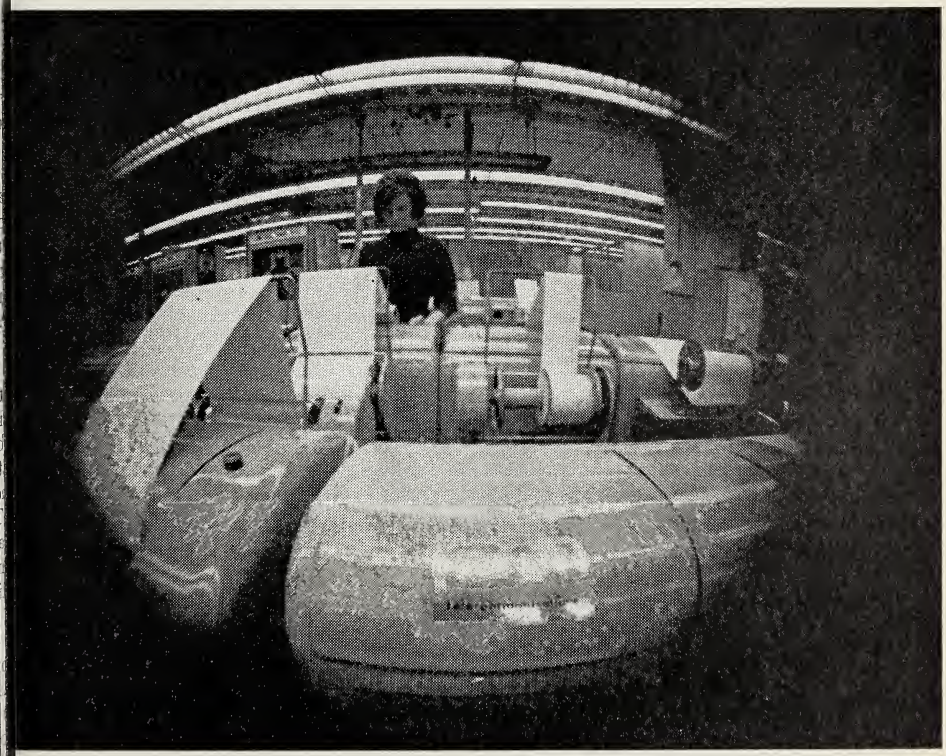
Wide Area Telephone Service.—Wide Area Telephone Service (WATS), operat by the Trans-Canada Telephone System, provides dial-type telephone communicati from one WATS zone directly to another long-distance zone. In other words, the subscri has a wider area that he may call directly without going through the long-distance operat or Direct Distance Dialling, and he may select any or all of the WATS zones he wish The customer has an access line to a dial exchange office for use only in originating WA calls. INWATS, the reverse series to WATS, was introduced in 1969. Subscribers a charged a measured time-period rate and an additional hourly rate. The measured tim period is 10 hours of accumulated time in each month and the additional hourly rate appli to the time used above the measured time.

Hot-Line Service.—A new service offered in 1969 by CN-CP Telecommunicatio and Western Union is the Hot-Line Service where companies in Toronto or Montreal m talk to their offices in New York City by simply picking up the handset of the telephon When a customer picks up his handset, the exchange equipment will seek out the prop telephone at the other end. If all the circuits are in use at the time of calling, the call will hang up and as soon as a circuit is free the equipment will make the connection a ring the telephone set at each end. Subscribers are charged on a time-used basis.

Private Wire Teletype Systems.—A transformation has been gradually taking place private wire systems. Most major Canadian firms with large communications requirements in years past found that private wire systems best suited their needs—that is, their wn private teletype network rented to them by telecommunications companies. Although ivate wire services are still a significant part of business for the telecommunications industry, prime communications users who must communicate with many stations across e country have been moving to the newer computer-controlled transmission systems.

Computer-Controlled Transmission Systems.—CNT, CPT and the Trans-anada Telephone System all have in operation store and forward message switching mputers which control the flow of message traffic. CNT pioneered in the uses of message itching computers in Canada, having operated in this field since 1964. Trans-Canada elephone System inaugurated a computer-controlled system in late 1968 and CPT put eir system in operation in 1970. The telephone companies have switching centres located Vancouver, Calgary, Edmonton, Regina, Winnipeg, Montreal and at Toronto, their imary centre. This computer-controlled system converts transmission codes and speeds d also determines where messages are to be sent.

CNT's system provides a switching medium for Air Canada, CP Air and CN administrative message traffic and also controls and transmits information on CN's reservation stem. When a railway customer wishes to make a reservation, a computer card is



A section of CNT's Data Central at Toronto, where store and forward message switching computers control the flow of message traffic for Air Canada, CP Air, the CN, and commercial users.

marked and inserted into a card reader. Within seconds, a reply will return via a te printer confirming the reservation. Air Canada's "Notice to Airmen" (NOTAM) proj is also handled by this system; particular flight plans, runway conditions and navigatio aids are stored in Air Canada's computer and given out to pilots across the country wh a special code is dialled on teletype machines. A third-generation computer installed f CNT in 1968 is performing major store and forward message switching functions for t Canadian Meteorological Service. When the computer finds a weather report from a one of the 175 DOT weather stations throughout Canada, it will tell the station equipme to transmit the report into the computer and it then determines where and at what ti of the day the information is to be sent.

Commercial telegrams are switched across the country by CNT's third-generati message switching computer. This undoubtedly is the most important development telegraph service since Morse.

A new service, introduced by CN-CP Telecommunications in 1970 and called TeleN uses central message switching computers. The TeleNet system concept is a number subscriber networks controlled by these central computers. The message switching co puter centres will handle many customers but each customer's network will be complete private. In its initial phase, TeleNet offerings will be confined to message switching a related features such as speed and code conversions, message storage and retrieval, hig speed data handling, interface with customer-owned computers and message refile. A sing message may be transmitted for delivery to as many as 64 destination stations by one gro routing indicator at one time. Two levels of priority are recognized by the computer Messages marked "quick" are handled immediately by the system.

Message switching computers are located at CNT offices in Toronto and CPT offic in Montreal and all Canadian subscribers' switching requirements will be routed by o of these centres. Future plans call for switching computer centres at Vancouver, Edmo ton, Winnipeg and Halifax. Three classes of service will be offered with TeleNet betwe customers with light, medium or heavy traffic volume requirements. Subscribers usi the heavy and medium classes will have full access to the Telex network. Various optio and capabilities of TeleNet will enable CN-CP to custom design a system to meet speci needs of individual subscribers.

Domestic Commercial Satellite Communications Facilities.—Increasing activit in the Canadian Arctic and sub-Arctic, where communities are being expanded and ne ones formed, as well as forecasts of the telecommunications needs of all of Canada, prompte the telecommunications industry and the Federal Government to consider a domest satellite system. In 1966, a proposal from Niagara Television Limited and the Pow Corporation of Canada Limited was submitted to the (then) Board of Broadcast Governo for a satellite system to distribute television programs for a third national television ne work. In March of 1967, the Trans-Canada Telephone System and CN-CP Telecommun cations proposed to the Government a domestic satellite telecommunications system carry television, telephone calls, data and other telecommunications services. In th same year RCA Victor Company Limited issued a proposal giving definite design criter for a communications satellite within the capabilities of Canadian industry. In 1968, t Northern Electric Company announced an agreement with Canadair Limited and Hugh Aircraft of California, to form a group interested in designing and building equipment f satellite communications. For some time this subject was also under study by the Depar ment of Transport and the result of this study was presented to the Government in 196 By July of 1967, an intense interest had developed in the potential of a domestic satelli system and the Prime Minister announced the creation of a Task Force, under the directio of the Science Secretariat, to advise on satellite policy in general and, in particular, on t use of satellite technology for domestic communications.

Following the release, on Mar. 28, 1968, of a White Paper based to a large extent on e recommendations of the Task Force on satellite policy, the Government of Canada tablished Telesat Canada by Act of Parliament (SC 1969, c. 51), which came into force proclamation on Sept. 1, 1969, to establish Canadian Domestic Satellite Telecommunica- n Systems providing telecommunications services on a commercial basis. Telesat Canada not a Crown corporation but is designed to be a commercial company to be owned jointly the Government of Canada, the Telecommunications Common Carriers, and the general blic, according to the provisions of the Act. The annual report of the company is tabled the House of Commons by the Minister of Communications.

Plans are proceeding for a target launch date in 1972 of the first satellite, to be named *nik*, an Eskimo word meaning "brother". The initial system, consisting of some 36 ound stations and two satellites, will be designed to provide television distribution in th English and French to many parts of Canada not now served by terrestrial facilities; provide telephone communications in Northern Canada; and to supplement existing icrowave systems serving Southern Canada. The satellites will be capable of simultaneous ansmission of all these services from stationary orbital positions to virtually all of Canada association with the ground stations. Present plans are to lease services to the Trans- nada Telephone System, CN-CP Telecommunications and the Canadian Broadcasting rporation.

When present plans materialize, Canada will be among the first nations in the world to erate a domestic commercial satellite communication system. The whole of Canada is sible in space from that part of the equatorial orbital plane lying between 96° and 116° est Longitude. This forms a 20°-arc and contains the satellite positions most desirable r Canadian domestic service. The satellite or satellites maintain a stationary orbit at altitude of 22,300 miles which means that they will rotate with the earth every 24 hours d therefore at any particular time of the day be over the same spot on earth.

Basically, satellite communication is just one long microwave link. The clarity and rength of transmission provided by a satellite will be comparable to that of existing icrowave systems; only with respect to time required for transmission from an originating rth station to a satellite and back to another receiving earth station will there be a notice- le difference. Because of the 22,300-mile altitude of the satellite, the two-way transit me will be about 600 milli-seconds or six tenths of a second. This delay will be of no ncern for one-way transmission services such as television, but it must be taken into ac- unt in the case of two-way voice circuits. To minimize the time effects, there must be avoidance of tandem connections on space facilities and, wherever possible, the operation voice circuits with one direction via satellite and the other via ground facilities.

These first-generation satellites will end their life cycle about five years after they are t into operation and undoubtedly additional satellite capacity will be required by then. e scope, capacity and design of the second-generation Canadian satellite will depend on chnical developments and traffic requirements during the intervening years. Canada's icrowave, land-line and troposcatter systems will continue to be the backbone of tele- mmunications services for many years to come but satellite communications, properly tegrated with land facilities, will make it possible to reach all areas to which service has t yet been economically feasible.

International Satellite Communications.—Since the *Telstar* satellite was launched 1962, Canada has made use of international satellites to connect to broadcast systems other continents. In 1964, Canada became one of the 20 charter members of *Intelsat*, e International Telecommunication Satellite Consortium, which now numbers 68 coun- es. Thus, Canada is a joint owner of *Intersat* satellites and participates in the global tellite system established by *Intelsat*.

Acting through the Crown-owned Canadian Overseas Telecommunication Corpora- n, Canada is currently using the *Intelsat* satellites for intercontinental telephone, data d television relays to and from the domestic communications systems of CN-CP Tele- mmunications and the Trans-Canada Telephone System.

Public and Private Commercial Microwave Facilities.—Canada, because of population distribution and the vast areas served by microwave communication links, ran second highest among the world's users of microwave communications systems on a capita/per mile basis. Increasing demand for television outlets has necessitated the tension of microwave routes to provide interconnections for the CBC English and Fren and private networks and these routes have been extended to permit the transmission colour television. With the use of more automated equipment by industry and vario services, associated data and control information must be transmitted at rapid speeds ov microwave radio-relay to widespread areas throughout the country.

Railways.—The Telecommunications Departments of the Canadian National a Canadian Pacific Railway Companies have placed in operation a microwave system e tending from Montreal to the Pacific Coast, which is used for television, telephone and da relay purposes. They also operate microwave facilities linking the Province of Quebec wi the Maritime Provinces and Newfoundland, and a major expansion of microwave faciliti in Newfoundland has been undertaken by Canadian National Telecommunications (CNT In addition, CNT has installed a microwave system between Alberta through the Yuk Territory to Alaska which carries telephone and data traffic and serves both civil and milita organizations in the area. In co-operation with Alberta Government Telephone, a co bination microwave and tropospheric scatter system connects Alberta and the Northwe Territories. This system also provides communication for civil and military use. $3,000,000 construction program was undertaken in 1970 by CNT which will provide combination microwave-scatterwave system linking the Yukon Territory with the Nort west Territories. Microwave will be used from Whitehorse to Keno and a tropospher scatterwave system will bridge the Richardson Mountains from Keno to Arctic Red Rive from there, microwave will be used north to Tuktoyaktuk. A scatterwave system hur transmissions up to the troposphere where they are bounced back to the next station son 600 miles away.

The Quebec North Shore Labrador Railways has developed a microwave system e tending into northern Quebec to provide communication for mining operations and to ser some civil communication purposes. Ontario Northland Railways operates a microwa installation connecting northern Ontario and James Bay, also for purposes of military an civil communication. The Pacific and Great Eastern Railway makes extensive use of 6,0 Mc/s microwave facilities linking Vancouver with Prince George and Dawson Creek B.C.

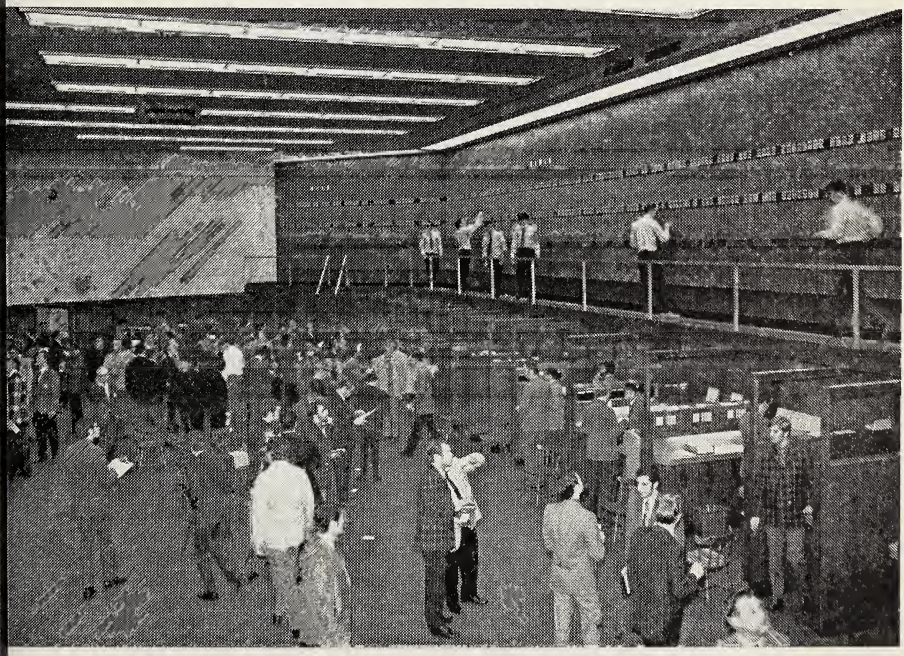
Telephones.—The Trans-Canada Telephone System consists of eight provincial an private systems collectively providing a transcontinental microwave system for the purpo of carrying telephone, television, data and other types of communication services. E tensive microwave systems are utilized within the respective provinces for civil and militar communications or television relay purposes. Major expansion has taken place in eac province, greatly increasing the number of areas served and system capacity for all type of communication requirements. Tropospheric scatter systems are employed to provid beyond-line-of-sight transmissions, especially to the Far North; these are used for bot civil and military applications.

The telephone companies of the three Prairie Provinces are constructing a major micr wave system extending from Winnipeg to Edmonton, to form part of a projected secon transcontinental microwave system operated by the telephone companies. The Britis Columbia Telephone Company has installed a major trunk system from Prince Rupert t Prince George, which is linked through Prince George with the transcontinental syste in the southern part of the province. A microwave system links Mill Village communica tion satellite earth station, near Liverpool, N.S., with the trunk route system of the Mari time Telegraph and Telephone Company.

Television.—The two main television interests in Canada—the CBC and CT Television Network Limited—lease private microwave facilities for the relay of televisio

ograms from coast to coast. In addition, studio transmitter links are used by various evision stations where the television transmitter is situated some distance from the studio d interconnection is required. In sparsely populated areas, off-the-air pick-up signals m primary television stations are sometimes relayed via microwave to rebroadcasting es. Microwave facilities are also used in connection with portable and mobile television k-up where program material is intended for the main studio. Both network facilities d local studio transmitter links have been upgraded to enable the transmission of colour evision.

Industrial.—Although many firms utilize public communication facilities on a lease sis, some organizations have installed private microwave systems to provide voice, etype and control data for various purposes. The British Columbia Hydro and Power thority, the Calgary Power Corporation, The Hydro-Electric Power Commission of tario, the Quebec Hydro-Electric Commission and Manitoba Hydro use a considerable mber of microwave relay systems for important control and communication purposes. r example, Hydro-Quebec has greatly expanded its hydro power generating capacity d new microwave routes have been added to permit a central control of the various generat- g stations. The British Columbia Hydro and Power Authority has installed facilities link the Vancouver area with Peace River, Mica Creek and the Bonneville Power Administration in the State of Washington, and also for system control in the Vancouver area. tario Hydro is constructing an extensive microwave system to provide important ntrol, monitoring and communications with all their facilities in southwestern Ontario.



Expanded facilities at the Vancouver Stock Exchange, prompted by recent record-breaking trading, included the installation of ultra-modern sophisticated electronic communications equipment which provides a greater amount of information more accurately and much faster than was previouly possible. Transaction information is now available only seconds after the trade takes place on the floor.

Instructional.—The Department of Communications has opened the 2,600 M microwave band for use by the various educational authorities in Canada for an instructi al TV system. Some systems have now been licensed and others are being planned. largest system is located at Calgary and it provides TV communications to 24 schools.

Miscellaneous Radio Communication Services.—In addition to radio communi tion services provided by the Federal Government, extensive radio communication syste have been established in the provinces and territories, mainly for police, highway forestry protection purposes. Municipal government departments continue to incre their use of radio to facilitate operations, particularly as a medium of communication w vehicles—police, fire, engineering, hydro, etc. Such services as taxi, heavy constructi ready-mix concrete, oil pipeline construction and operation, veterinarian and rural medi also make extensive use of radio for communication purposes.

Public utilities, power companies, provincial power commissions, oil exploration a mineral development organizations have expanded considerably their use of radio in b mobile and point-to-point radio fields.

The telecommunication companies provide an extension of land telephone service, radio, to suitably equipped vehicles. This service is available in all major cities in Cana and along many of the nation's arterial highways. Restricted common-carrier mob radio service (which does not permit interconnection with the over-all telephone system b only with specific dispatchers) is available in most major cities in Canada as well as i number of smaller urban centres. It is provided by telephone companies as well as by oth organizations. Low-power radio stations may be licensed to permit short-distance perso and private business radio-telephone communications.

Subsection 2.—Telephone and Telegraph Statistics

Telephone Statistics.—In 1969 there were 1,888 telephone systems operating Canada compared with 2,067 in 1968; of these systems, 1,618 reported in 1969 and 1,7 in 1968. Co-operative systems in rural districts decreased in number from 1,615 to 1,4 in the same comparison and incorporated companies from 109 to 92. The largest of t incorporated companies, Bell Canada, which operates throughout the greater part Ontario and Quebec and in Newfoundland and the Northwest Territories, served 62 p. of all the telephones in Canada in both years and the British Columbia Telephone Compan also shareholder-owned, served 9.9 p.c. of the total in 1969. The number of telephones use continues to increase at the rate of about 6 p.c. annually.

1.—Pole-Line and Wire Mileage and Number of Telephones in Use, 1960-69

Year	Systems Reporting	Route Mileage	Length of Wire	Telephones in Use			
				Business	Residential	Total	Per 100 Populatio
	No.	miles	miles	No.	No.	No.	No.
1960	2,558	274,855	25,333,802	1,673,915	4,054,252	5,728,167	32.2
1961	2,509	306,167	26,986,478	1,729,599	4,284,416	6,014,015	32.6
1962	2,430	314,523	28,930,413	1,816,895	4,512,553	6,329,448	33.7
1963	2,296	284,202	31,267,977	1,910,178	4,746,435	6,656,613	34.9
1964	2,421	281,036	33,731,622	2,016,182	5,003,192	7,019,374	36.1
1965	2,330	283,478	36,666,557	2,142,256	5,302,815	7,445,071	38.1
1966	2,130	290,936	40,586,184	2,286,753	5,595,875	7,882,628	38.9
1967	2,057	295,532	43,959,453	2,423,308	5,935,115	8,358,423	40.5
1968	1,772	298,000	48,110,000	2,557,059	6,260,787	8,817,846	42.1
1969	1,618	297,000	53,138,000	2,719,317	6,576,731	9,296,048	43.7

2.—Telephones in Use, by Province, 1969

Province or Territory	On Individual Lines		On 2-and 4-Party Lines		On Rural Lines		Public Pay Telephones
	Business	Residential	Business	Residential	Business	Residential	
	No.	No.	No.	No.	No.	No.	No.
foundland	11,745	49,609	1,393	27,820	33	1,360	998
ce Edward Island	2,371	11,914	73	1,882	231	7,750	221
a Scotia	16,009	125,929	817	13,858	929	28,998	3,394
Brunswick	17,848	86,896	500	22,027	557	20,885	2,039
ec	208,310	1,144,863	4,669	198,311	4,427	106,759	22,217
rio	285,418	1,547,656	4,147	338,467	6,901	176,720	26,612
toba	39,251	202,291	237	16,336	2,546	40,100	3,012
atchewan	32,900	175,964	1	242	2,913	58,074	3,171
rta	63,101	348,185	1,365	33,142	897	17,694	5,546
sh Columbia	79,252	284,840	101	214,349	3,001	79,338	6,605
n Territory	1,117	895	199	1,832	—	—	71
hwest Territories	1,415	2,565	200	1,366	—	—	108
Canada	**758,737**	**3,981,607**	**13,702**	**869,632**	**22,435**	**537,678**	**73,994**

Province or Territory	Private Branch Exchanges		Extensions		Mobile	Total	Telephones per 100 Population
	Business	Residential	Business	Residential			
	No.	No.	No.	No.	No.	No.	No.
foundland	13,232	—	9,057	11,804	139	127,190	24.6
ce Edward Island	2,215	—	3,050	2,650	—	32,357	29.4
a Scotia	27,810	—	26,135	28,813	43	272,735	35.7
Brunswick	22,194	—	15,550	25,366	1,671	215,533	34.6
ec	332,448	19	179,988	305,733	2,485	2,510,229	41.8
rio	515,109	92	232,979	533,018	1,510	3,668,629	48.5
toba	46,583	—	25,557	41,510	152	417,575	42.7
atchewan	32,795	—	19,600	32,975	246	358,881	37.9
rta	89,509	—	51,243	82,029	3,387	696,098	43.9
sh Columbia	119,508	—	70,381	123,178	2,678	983,231	46.5
n Territory	783	—	688	264	35	5,884	36.8
hwest Territories	855	—	778	363	56	7,706	23.4
Canada	**1,203,041**	**111**	**635,006**	**1,187,703**	**12,402**	**9,296,048**	**43.7**

The major telephone systems record completed calls on representative days throughthe year and on this basis estimate the number of local conversations which, added he actual count of long-distance calls, gives their total volume of business. Estimates included for the smaller systems.

Local and Long-Distance Calls and Average Calls per Capita and per Telephone, 1960-69

Year	Local Calls	Long-Distance Calls	Total Calls	Total Calls per Capita	Average Calls per Telephone		
					Local	Long-Distance	Total
	'000	'000	'000	No.	No.	No.	No.
	9,364,586	215,275	9,579,861	537	1,635	37.6	1,672
	10,242,657	226,258	10,468,915	568	1,703	37.6	1,741
	10,558,129	250,239	10,808,368	576	1,668	40.0	1,708
	11,065,030	257,548	11,322,578	593	1,662	39.0	1,701
	11,658,113	281,239	11,939,352	614	1,661	40.1	1,701
	12,138,243	301,614	12,439,857	628	1,630	40.5	1,671
	12,846,178	323,325	13,169,503	650	1,630	41.1	1,671
	13,053,115	357,414	13,410,529	650	1,562	42.7	1,605
	13,993,601	388,007	14,381,608	687	1,587	44.0	1,631
	14,596,659	434,292	15,030,951	707	1,570	47.0	1,617

The steady increases in capitalization, revenue and expenditure of telephone compani together with the figures of number of employees and salaries and wages paid are sho for the years 1960-69 in Table 4. Provincial figures for 1969 are given in Table 5.

4.—Financial Statistics of Telephone Systems, 1960-69

Year	Capital Stock[1]	Long-Term Debt	Cost of Plant	Revenue	Expenditure	Full-Time Employees	Salaries and Wages[2]
	$	$	$	$	$	No.	$
1960	758,291,439	1,068,399,476	2,692,484,052	627,982,847	549,042,848	57,670	247,128,4
1961	879,424,405	1,134,866,419	2,926,527,459	679,306,194	590,428,169	56,322	254,207,7
1962	1,012,220,461	1,151,169,891	3,192,229,994	733,294,451	636,542,442	58,091	269,284,7
1963	1,207,147,639	1,144,518,306	3,510,479,137	787,374,716	687,272,971	58,416	288,772,5
1964	1,328,991,574	1,241,015,012	3,808,675,460	860,207,384	746,503,960	60,829	306,454,0
1965	1,380,189,560	1,348,911,971	4,127,386,680	948,177,117	821,204,894	63,467	335,364,9
1966	1,575,983,073	1,667,390,608	4,544,521,877	1,048,837,049	912,452,623	68,154	374,372,0
1967	1,624,202,963	1,898,269,911	5,010,998,761	1,163,855,575	975,438,821	68,431	408,066,4
1968	1,657,588,452	2,089,385,565	5,467,325,999	1,268,387,079	1,095,762,627	66,699	436,542,9
1969	1,702,556,224	2,233,048,410	5,988,210,845	1,404,325,403	1,227,420,272	66,578	479,067,5

[1] Includes premium on capital stock. [2] Full-time and part-time.

5.—Financial Statistics of Telephone Systems, by Province, 1969

Province or Territory	Capital Stock[1]	Cost of Plant	Revenue	Expenditure	Full-Time Employees	Salaries and Wages[2]
	$	$	$	$	No.	$
Newfoundland	22,856,351	55,379,535	13,957,328	12,806,013	859	5,028,4
Prince Edward Island	5,181,260	16,776,678	3,599,176	3,149,205	198	995,4
Nova Scotia	53,212,848	172,329,029	38,795,530	33,581,109	2,494	14,078,5
New Brunswick	47,058,431	159,593,679	35,653,503	31,149,903	2,029	12,447,0
Quebec	1,293,132,770	3,772,048,872	902,718,450	784,746,323	17,746	131,543,4
Ontario	28,470,260	65,031,904	18,779,908	15,246,285	20,752	158,208,5
Manitoba	—	278,546,146	54,321,749	52,314,264	3,991	26,076,7
Saskatchewan	48,045,633	263,335,832	54,681,891	43,871,381	2,661	17,422,8
Alberta	2,216,190	532,125,261	121,655,201	110,017,884	7,270	52,327,7
British Columbia	202,382,481	673,043,909	160,162,667	140,537,905	8,569	60,848,0
Northwest Territories	—	—	—	—	9	90,6
Canada	**1,702,556,224**	**5,988,210,845**	**1,404,325,403**	**1,227,420,272**	**66,578**	**479,067,5**

[1] Includes premium on capital stock. [2] Full-time and part-time.

Telegraph Statistics.—There were nine telegraph and cable companies operating i Canada during 1967 but, as already stated, telegraph service is provided mainly by th telecommunications departments of the two major railway companies (see also p. 964 The number of telegrams sent continues to decline year by year, giving way to other typ of message transmission, but the number of cablegrams sent has been rising. The busine of telegraph and cable companies appears to be changing from one of handling messag directly to one of leasing equipment for the transmission of messages by others. Revenu from the latter source have been rising over the past several years and have been th main factor in the steady advance in total operating revenues. Total cost of propert and equipment for all telegraph and cable companies was $545,694,618 in 1969, increasi from $519,949,814 in 1968.

6.—Summary Statistics of Canadian Telegraphs, 1960-69

ear	Operating Revenues	Operating Expenses	Net Operating Revenue	Pole-Line Mileage	Wire Mileage	Em-ployees[1]	Telegrams	Cable-grams[2]	Money Transfers
	$	$	$	miles	miles	No.	No.	No.	$
.....	58,546,167	45,538,063	13,008,104	48,159	510,640	10,279	15,546,292	2,533,014	25,134,534
.....	64,053,626	51,735,006	12,318,620	48,675	524,720	9,997	15,138,706	2,662,931	25,041,156
.....	71,379,074	56,451,679	14,927,395	48,381	534,074	10,069	14,451,416	2,606,103	28,060,157
.....	73,611,349	60,256,828	13,354,521	49,536	532,551	9,826	13,338,941	2,668,796	30,133,340
.....	78,743,332	63,865,422	14,877,910	49,730	537,438	9,431	12,946,062	2,751,623	32,378 177
.....	86,087,398	68,869,393	17,218,005	49,623	544,759	9,270	12,788,585	3,037,939	38,865,118
.....	95,478,146	74,684,229	20,793,917	50,538	547,652	9,161	11,455,849	3,232,073	36,139,334
.....	104,504,533	78,715,818	25,788,715	50,161	557,354	8,961	10,474,908	3,575,806	36,014,438
.....	116,665,518	86,425,655	30,239,863	49,497	573,276	8,687	9,672,993	4,056,505	45,163,493
.....	126,567,928	92,770,393	33,797,535	49,294	563,229	7,860	7,618,280	4,234,632	41,654,407

[1] Excludes commission operators. [2] Includes wireless messages and transatlantic Telex messages.

Subsection 3.—Federal Control over Telecommunications and Federal Civil Telecommunications Services*

deral Control over Telecommunications

The Department of Communications was established on Apr. 1, 1969, under the au-rity of the Government Organization Act of that year. The duties, powers and func-ns of the Minister of Communications extend to and include all matters relating to ecommunications over which the Parliament of Canada has jurisdiction, not by law igned to any other department, branch or agency of the Government of Canada; and development and utilization generally of communications undertakings facilities, tems and services for Canada. He is responsible for the administration of the Telegraphs t, the Radio Act, and the Canadian Overseas Telecommunication Corporation Act.

Telephone and telegraph companies incorporated under the Federal Parliament are ject to the jurisdiction of the Canadian Transport Commission in the matter of rates l practices under the provisions of the Railway Act. Previously the CTC regulated es only in those cases in which a charge was made to the general public; recent amend-nts to the Railway Act extend the jurisdiction of this body to cover rates charged for vate wire services as well. International telegraph and telephone communications are ndled subject to the International Telecommunication Convention and its Regulations, under regional agreements, or both. Overseas cables landed in Canada are subject to External Submarine Cables Regulations under the Telegraphs Act.

Radiocommunications in Canada, except for those matters covered by the Broad-ting Act, are regulated under the Radio Act and Regulations, and the Canada Shipping t and Ship Station Radio Regulations. Amendments to the Radio Act in the past year vide for the licensing of Canadian earth and space stations engaged in space communica-ns services. Radiocommunications in Canada are administered in accordance with the ernational Telecommunication Convention and Radio Regulations annexed thereto; International Civil Aviation Convention; and the International Convention for the fety of Life at Sea. A number of Canadian–United States conventions and agreements also in effect, such as: the Convention for the Promotion of Safety on the Great Lakes by ans of Radio; the Convention relating to the operation by citizens of either country of tain radio equipment or stations in the other country; the Agreement relating to the -ordination and Use of Radio Frequency above Thirty Megacycles per Second; and the levision and FM Agreements. In addition, Canada is a party to the North American gional Broadcasting Agreement.

*Prepared by the National Telecommunications Branch, Department of Communications, Ottawa.

Under the Broadcasting Act of 1968, the Canadian Radio-Television Commiss issues licences for broadcasting undertakings. However, the licences are not issued unl the Minister of Communications certifies to the Commission that the applicant has satisf the requirements of the Radio Act and regulations thereunder, and has been or will be issu a Technical Construction and Operating Certificate under that Act. Broadcasting und takings include radio (AM and FM) and television broadcasting stations, commun antenna television (CATV) systems, and network operations. The technical rules a procedures for the allocation of frequency channels and installation and technical operat of broadcasting station facilities are set forth in the Department's *Broadcast Procedu and Radio Standards Specifications*. These documents form the basis for determining acceptability of applications for Technical Construction and Operating Certificates a for the control of the technical operation of broadcasting undertakings. The availabil of the technical facilities for broadcasting is subject to the terms of the North Ameri Regional Broadcasting Agreement, the Canadian–U.S.A. Television Agreement and Canada–U.S.A. FM Agreements.

Telesat Canada, a Corporation created by an Act of Parliament, June 27, 1969, responsible for Canada's proposed domestic communications satellite. It has a unic form of financing—the Government, designated Common Carriers, and the general pub will each be offered about one third of its shares. The Corporation reports to Parliam through the Minister of Communications. (See also p. 969.)

Licensing and Regulation of Radio and TV Stations.—Licensing is the Fede Government's method of maintaining control over radiocommunications in Canada. Un the Radio Act, radio stations (other than those used in broadcasting undertakings) e ploying any form of Hertzian wave transmission, including television and radar, are quired to be licensed by the Department of Communications, unless exempted by regulati There are six classes of radio station licence: Coast, Land, Mobile, Ship, Earth and Spa Various categories of service may be authorized under each of these classes; for examp Public Commercial Service, Private Commercial Service, Amateur Experimental, etc. T number of licences in force for radio stations in Canada in the year ended Mar. 31, 19 was 229,785 compared with 219,590 in 1967-68. These figures include stations opera by federal, provincial and municipal government departments and agencies, stations ships and aircraft registered in Canada and stations in land vehicles operated for b public and private purposes, but they do not include stations in the broadcasting serv Following are comparative figures for the licensing periods 1967-68 and 1968-69:—

Item	*1967-68*	*1968-69*
New applications received	30,878	28,823
Authorization granted	28,279	27,454
Licence amendments	34,985	24,431
Licence cancellations	10,970	17,093
Total licences in force	219,590	229,785
Net increase in licences in force over preceding year	27,741	10,195

Radio Standards in general are drawn up in consultation with the electronic indus and users of radio, taking into account such technical factors as those which affect f quency spectrum utilization, reliability of apparatus, and compatibility under conditi of service. To facilitate the development of standard specifications, and for test necessary to determine whether apparatus complies, the Department of Communicati maintains an engineering laboratory.

Licensing involves the assigning of specific frequencies to each station. Bands frequencies are allocated for various types of services, often on a shared non-interfere basis. Frequency selection, compatibility evaluation, recording and notification with International Frequency Registration Board (IFRB) of the International Telecommuni tions Union at Geneva are carried out to ensure efficient use of the spectrum. Assignme are made in keeping with international and domestic statutes and regulations, regio

eements and domestic policies. The IFRB is notified of frequency assignments for hnical examination and for inclusion, with appropriate "in-service" dates, in the inter- ional frequency list so that Canadian assignments will receive international recognition l be given protection from interference by foreign stations. "In service" dates are essary when determining prior right to the use of particular frequencies.

The enforcement activities of the Telecommunications Regulation Branch, Depart- nt of Communications, include the technical inspection of all radio stations including monitoring and measurement of their radiated signals to ensure compliance with the ulations and conditions of licensing; the location and suppression of radio interference; technical examination of candidates for the various classes of certificates of proficiency radio which must be held by the operators of radio stations; and the direction of prosecu- ns in the courts. These functions are carried out through personnel located at 34 radio ulations inspection offices, 10 fixed monitoring stations, seven mobile monitoring vehi- s, and six regional spectrum observation centres across Canada. Through decentrali- ion, the six regional offices share with headquarters in the direction of day-to-day acti- ies of the Telecommunications Regulation Branch, and the development of suitable grams and facilities for the recruitment and training of necessary technical personnel the Department.

deral Civil Telecommunications Services

The Department of Communications is made up of the Communications Research ntre formed from the Department of Defence Research Telecommunications Establish- nt, the Telecommunications Management Bureau transferred from the Ministry of ansport, and the Policy, Plans and Programs Branch. The work of the Research Centre nges from fundamental studies on materials and circuits to the design of advanced high- iability avionics and aerospace electronic systems. The Telecommunications Manage- nt Bureau is responsible for: (1) development of policy and plans with respect to national d international telecommunications by satellites, cables and other media including ations with the Canadian Overseas Telecommunications Corporation and participation the work of the International Telecommunications Union and its subsidiary organs; establishment and review of the telecommunications requirements of the Federal Govern- nt departments and agencies throughout Canada, and co-ordination of the planning d provision of faculties to meet these needs; (3) planning of emergency measures and ministration of the Emergency National Telecommunication Organization (ENTO); development and maintenance within the Bureau of a centre of competence in the latest ecommunications technology; and (5) administration of the Radio Act and Regulations luding allocation and assignment of radio frequencies, radio provisions of the Canada ipping Act, Ship Station Radio Regulations, the Telegraphs Act and the Regulations reunder covering the licensing of transoceanic cables.

Radio Aids to Marine and Aeronautical Navigation.—Federal services in aid of rine and aeronautical navigation are outlined in the following paragraphs; details may be tained on request from the Ministry of Transport, Ottawa. Six regional offices, located Vancouver, B.C., Edmonton, Alta., Winnipeg, Man., Toronto, Ont., Montreal, Que., d Moncton, N.B., carry out the construction and operations of the facilities.

Marine Navigation.—Radio aids to marine navigation are provided for radio-equipped nadian vessels and foreign ships using Canadian waters. This safety and communications vice for shipping covers the East and West Coasts, the Great Lakes, the St. Lawrence ver and Gulf, Hudson Bay and Hudson Strait and includes regularly broadcast weather orts, storm warnings and notices of danger to navigation. Ships at sea may obtain dical advice from any coast station. The stations carry out communications by radio- egraph and/or radiotelephone and most of them provide connections to land telephone

lines. Halifax (VCS) and Vancouver (VAI) stations provide long-range radiotelegr and radiotelephone services to ships. Coast stations on Hudson Bay and Hudson Str in addition to their regular services, provide commercial communications for posts of Hudson's Bay Company and various prospecting and development organizations, m weather observations, handle administrative traffic and assist aircraft with informati landing conditions, etc.

Automatic radiobeacon stations are maintained on the East and West Coasts, the Lawrence River and Gulf, the Great Lakes and Hudson Bay and Strait, giving navigatio aid to mariners by transmitting signals on which bearings may be taken. These stati are arranged, where possible, in groups up to a maximum of six stations transmitting sequence on a common frequency, the sequence being repeated continually regardless weather conditions.

Loran is a long-range radio aid to marine and air navigation providing accurate fi at distances up to 750 miles by day and 1,500 miles by night. Two Loran stations oper in Nova Scotia, three in Newfoundland and one on the West Coast. These stations, conjunction with Loran stations of the United States Coast Guard, give service to sh and aircraft plying the North Atlantic and Pacific Oceans. *Decca* is a short-range ra aid to navigation providing accurate fixes at distances up to 250 miles. Four chains Decca stations are in operation—the Newfoundland chain, the Nova Scotia chain, t Anticosti chain, and the Cabot Strait chain—giving service to ships off Newfoundla and Nova Scotia and in the St. Lawrence River and Gulf.

It has become general practice to equip merchant ships with radar and import buoys are fitted with radar reflectors to increase their radar visibility. A shore-based rac installation is in operation on the Lion's Gate Bridge across the entrance of Vancou Harbour. A radar transponder beacon is in operation during the navigation season Tuktoyaktuk, N.W.T. Low power transceivers are provided for use in emergencies lighthouses, particularly at locations that would otherwise be completely cut off fr assistance in case of illness.

Aeronautical Navigation.—Radio aids to air navigation are provided by the Minist of Transport from coast to coast and from the United States border to the Arctic regio for use by Canadian aircraft and foreign air carriers flying over Canadian territory.

Low frequency radio aids operating on the frequency band 200-415 KHz are genera located within a distance of 50 to 100 nautical miles of each other to form the low frequen airways system. A few are located "off airways" in remote regions and a number of l power radiobeacons serve major airports as terminal and landing aids. The Ministry Transport operates 275 en route, low frequency aids (28 of which are the older type rad range class) and 56 low power terminal radiobeacons. These facilities are used primari in association with airborne direction finding equipment. Voice channels on a number low frequency aids are also used for aircraft communications and weather broadca purposes.

Operating on the higher frequency bands VHF (very high frequency) and UHF (ult high frequency), the Ministry of Transport operates 55 VHF Omni-directional Rang (VOR), 56 Instrument Landing Systems (ILS) and 30 Tactical Air Navigation Syste (TACAN).

The VOR stations form the VHF airways system which closely parallels the older lo frequency airways system. Use of the VOR permits a pilot to select any desired cours Additional VOR stations are being constructed on a continuing basis. TACAN stations a collocated with the VOR at 30 locations. The TACAN provides the pilot with a readou of the distance of the aircraft from the VOR station. The complete station is called VORTAC.

Instrument Landing Systems (ILS) provide radio signals which permit aircraft landin during periods of low visibility. Radio transmitters provide lateral and slope guidance the approach end of the runway and also provide an indication of the distance to the runwa

reshold. For air traffic control purposes, there are three main classes of radar in operation Canadian airports consisting of: 16 airport and airways surveillance radars (AASR) h a range of 150 nautical miles; seven airport surveillance radars (ASR) with a range of nautical miles; and nine precision approach radars (PAR), which are short-range radars d for landing at major airports.

Radiotelephone communications are provided by 117 ground stations. From these tions, a pilot may obtain weather data, air traffic control instructions and other informa- n concerning flight safety. These stations operate for the most part on the very high quency (VHF) band but in the north and on international routes high frequency (HF) utilized to provide the necessary long-range coverage. Fourteen of the 117 stations gage in international communications services for Canadian and foreign air carriers. these ground stations are connected to a fixed teletype network with over 48,000 circuit les provided to meet aeronautical communications needs.

Meteorological Communications.—Weather stations operated by the Canadian eteorological Service of the federal Ministry of Transport are linked coast-to-coast by eans of teletype and, in the remote northern areas, by radio or radioteletype. These d other services provided by the Meteorological Service are described in detail at pp. 30-34.

Subsection 4.—Overseas Telecommunications Services

The Canadian Overseas Telecommunication Corporation was established in 1950 to aintain and operate external telecommunication services for the conduct of public com- unications by cable, radiotelegraph and radiotelephone and any other means of tele- mmunication between Canada and overseas points; to make use of all developments in ble and radio transmission and reception for external telecommunication services; and conduct investigation and research with the object of improving and co-ordinating such ecommunication services with the telecommunication services of other nations.

The services currently being provided are as follows: direct telegraph, telephone and ex communications between Canada and Argentina, Australia, Austria, Barbados, lgium, Bermuda, Brazil, Britain, Chile, Cyprus, Denmark, Finland, France, Germany, reece, Hong Kong, the Irish Republic, Iceland, Israel, Italy, Jamaica, Japan, the Nether- nds, New Zealand, Norway, Peru, the Soviet Union, Sweden, Switzerland and Trinidad d Tobago; direct telephone and telegraph services with the Islands of St. Pierre and iquelon; direct telephone with Antigua, South Africa and Spain; and direct telex with rtugal and the Philippines. Datel 600 service is in operation between Canada and itain and Switzerland. International telex service is provided with 160 countries.

The first transatlantic telephone cable, a joint project with the British Post Office, the merican Telephone and Telegraph Company, Eastern Telephone and Telegraph Company d the Corporation, was brought into service in 1956. Since 1961, the following cables ve been brought into service: the Canada–Greenland–Iceland 24-circuit telephone cable CECAN)—a two-party enterprise of the Great Northern Telegraph Company of Denmark d COTC; the Canada–Britain 80-circuit telephone cable (CANTAT); the Common- alth Trans-Pacific 80-circuit cable—a four-party enterprise of Canada, Britain, New aland and Australia, connecting Vancouver and New Zealand and Australia via Hawaii d Fiji (COMPAC); the South East Asia Commonwealth 80-circuit cable—a six-party terprise of Canada, Britain, New Zealand, Australia, Malaysia and Singapore, connecting ustralia, Hong Kong, Singapore and Kuala Lumpur via New Guinea and Guam (SEA- OM), the CANTAT, COMPAC and SEACOM cables collectively forming part of the und-the-world Commonwealth Telephone Cable System; and a number of circuits for

Canadian purposes have been acquired in telephone cable systems connecting Bermuda a the United States and Jamaica and the United States. Currently under construction i large-capacity telephone cable between Nova Scotia and Bermuda (CANBER).

The Corporation also operates direct circuits via the Atlantic satellite with Argenti Austria, Belgium, Brazil, Britain, Chile, Denmark, France, Germany, Greece, Italy, t Irish Republic, Israel, the Netherlands, Peru, Spain and Switzerland. The earth stati constructed for the Ministry of Transport at Mill Village, N.S., for research and expe mentation with respect to satellites was brought into service in 1966 for commercial use a carried 240 telephone circuits for North American–European traffic via INTELSAT (Early Bird). The Corporation's own earth station, Mill Village 2, came into service March 1969 and operates with the larger capacity satellites of the INTELSAT III seri which have replaced INTELSAT I. The experimental station serves as a standby f commercial operation purposes. The Corporation at present operates direct circuits v the Pacific Satellite with Australia, Hong Kong and Japan through the American-own earth station at Jamesburg, California, pending the erection of its own earth station Vancouver Island.

Apart from normal use of its system for public telephone, telegraph message traffic a telex service, capacity is available for private leased circuits.

Canada, represented by Canadian Overseas Telecommunication Corporation, is member of the Interim Communications Satellite Committee (ICSC) set up by the parti pating nations for the development and operation of a global communications satelli system. The Corporation also represents Canada on the Commonwealth Telecommunic tions Council.

The Corporation, under a long-term agreement, has under charter from the Ministry Transport the CCGS *John Cabot*, a combined ice-breaker/cable repair ship, used mainly f repairing the cables in the western North Atlantic Ocean. The Corporation also operat a cable depot at St. John's, Nfld.

7.—External Cables Landed in Canada, 1970

Company and Station	Cables	Nautic Miles
	No.	No.
Canadian Overseas Telecommunication Corporation (COTC)—		
Port Alberni, B.C. to Sydney, Australia via Hawaii, Fiji Islands and New Zealand	1	8,232
Sydney Mines, N.S. via Clarenville, Nfld. to Oban, Scotland[1]	[2]	2,280
Hampden, Nfld. to Oban, Scotland (CANTAT)	1	2,010
Hampden, Nfld. to Vestmannaeyjar, Iceland via Greenland	1	1,657
Western Union International Inc. (WUI)—		
Bay Roberts, Nfld. to Hammil, N.Y., U.S.A.	2	2,778
Bay Roberts, Nfld. to Azores	1	1,343
Eastern Telephone and Telegraph Company (ET&T)—		
Sydney Mines, N.S. via Clarenville, Nfld. to Oban, Scotland[1]	[2]	2,280
Sydney Mines, N.S. via Clarenville, Nfld. to Penmarch, France	2	2,400
New Brunswick Telephone Company Limited (NBTEL)—		
Campobello Island, N.B. to Lubec, Me., U.S.A.	1	0.3

[1] Twin cable from Clarenville, Nfld. to Oban, Scotland, and single cable from Clarenville, Nfld. via Terrenc ville, Nfld. to Sydney Mines, N.S. [2] Licensed for operation by two carriers—COTC and ET&T.

Increased use of all types of overseas telecommunication services resulted in th COTC reporting a net profit of $6,132,444 for the year ended Mar. 31, 1970. Income f the year amounted to $33,155,103.

Section 2.—Radio and Television Broadcasting*

Since the opening program from the first radio station was beamed into a few Montreal mes in 1918, radio and television programming has become a prominent part of daily life almost every Canadian. To have become such a force in the life of the nation, broadsting had to learn the needs of the people and how to serve them. Two official languages rming two distinct cultures had to be served independently and dozens of other smaller ups, distinct in culture and frequently dwelling in the same radio or TV coverage area t in separate communities and with divergent program interests, also had to be served. ysical problems of distance and geography had to be overcome. It requires some ndreds of radio transmitters and TV stations and satellites to reach a population disuted across a 4,000-mile southern frontier, through seven time zones and a variety of ographical and climatic regions, and scattered northwest through thousands of square es to the shores of the Arctic Ocean. Not only do these people have local service that a reflection of life in their own districts but, by means of thousands of miles of land-lines radio networks and microwave circuits for television, nearly every Canadian may, at e same time, listen or watch as an event of national or international interest takes place.

The broadcasting system in Canada comprises public and private components. The ic principles for broadcasting, both radio and television, are laid down in the Broadting Act of 1968, with the direction of broadcasting in the hands of the Canadian Radioevision Commission (CRTC). The Commission, established in 1968 to replace the ard of Broadcast Governors, regulates and supervises all aspects of the broadcasting tem, except for technical matters relating to the planning for and the construction of adcasting facilities for which the Minister of Communications is responsible. An licant for licence to establish and operate an AM, FM or TV broadcasting station, a mmunity antenna television system (CATV) or a network files completed application ms with the Secretary of the CRTC. If found technically acceptable by the Commission, ublic notice is issued in the *Canada Gazette* and in one or more newspapers of general culation within the area served or to be served by such station or system. The same cedure applies to an application for renewal or amendment of an existing licence. The TC is composed of five full-time Commissioners and ten part-time Commissioners resentative of the various regions of Canada.

The Canadian Broadcasting Corporation, a publicly owned corporation established by of Parliament, provides the national broadcasting service in Canada. Its radio and evision facilities extend from Atlantic to Pacific and into the Arctic Circle. The CBC, ated in 1936 to replace an earlier public broadcasting agency that had operated since 2, is financed mainly by public funds voted annually by Parliament but supplementary enue is obtained from commercial advertising (see p. 986). Head office is in Ottawa the main production centres are in Toronto for English networks and in Montreal for nch networks. Regional centres operate across the country.

Radio.—Despite the impact of television, radio remains an important means of comnication for Canada's population, although its role has changed considerably. The C networks continue to provide a wide variety of programming to a national audience much of the listening is concentrated on the large number of private local stations. The us of attention has shifted from the group-listening that prevailed in pre-television days he individual listener in the home, the automobile or out-of-doors. Programming has changed, much attention now being given to music, news and weather and to a style t is intimate, relaxed and spontaneous.

Of all households in Canada, 97.4 p.c. are equipped with radio. In about half of them re is more than one set and often, in addition, there is a radio in the car and one or more table transistor sets. It is estimated that there is about one radio set for every two sons. To serve this audience, there is an English-language and a French-language radio work, both operated by the CBC, and also a considerable number of privately owned

* Prepared by the Canadian Radio-Television Commission.

radio stations, some affiliated with the CBC networks and some serving an entirely loc function. Of the 312 AM stations in operation, 34 are owned by the CBC and 278 a privately owned. The English network consists of 26 CBC stations and 61 private statio affiliated with it; the French network is made up of seven CBC stations and 34 priva affiliates. The more than 200 unaffiliated private radio stations perform a basically loc community service. Of the 77 FM stations, six are operated by the CBC and 71 a privately operated. The private stations are financed entirely from advertising revenu

In addition to a coast-to-coast English network and a French network that reaches large proportion of the country's French-language population in eight of the ten provinc the CBC provides regional and local services. Its networks extend over more than 21,0 miles. It has its own news service and offers a wide variety of programs in informatio public affairs and entertainment. Three special services—the international service, t northern service and the Armed Forces service—are outlined on pp. 984 and 985.

Television.—Television programming began in Canada in 1952. Of 5,460,000 hous holds in the country, 5,250,000 are equipped with one or more television sets. Colo broadcasting, which began in 1966, is rapidly gaining in popularity. Of three televisi networks, two are operated by the CBC, one in English and one in French. The 5,000-m microwave network that links St. John's in Newfoundland to Vancouver Island and t Pacific Northwest is one of the longest in the world. The second English network, CTV, composed of 16 privately owned stations and 30 affiliated stations; it reaches over half the homes that have television in Canada and continues to increase its coverage.

As of June 1970, Canada had 128 originating stations, including 18 frontier packa stations, and 232 rebroadcasting transmitters. The CBC owned and operated 59 statio and 52 rebroadcasting transmitters and provided a substantial proportion of its nation programming service through 48 privately owned stations which, with their 144 rebroa casting stations, were affiliated with it. Six private stations are not affiliated with a network.

From the start, the development of Canadian television was complicated by geograp cal and language factors. About 50 p.c. of the people of Canada live near the United Stat border and have available to them programs broadcast by one or all of the major Unit States networks. This fact and the need to maintain a Canadian identity and to articula Canadian interests contributed to the rapid development of Canadian television servic It was also important that French-language television services be quickly developed f that considerable portion of the Canadian population whose mother tongue is French. a result of this rapid development, Toronto and Montreal rank among the world's princi television production centres in the English and French languages, and Vancouver, Winnip Ottawa, Quebec, Halifax and St. John's have become regional production centres. Of t 17 CBC stations, 12 broadcast in English and five in French. Of the 59 private statio 33 English-language and nine French-language stations are affiliated with the CBC. Th are 12 private English-language stations affiliated with the CTV network and one Englis language and three French-language stations operate independently.

Canadians at present view live television programs from overseas by means of Unit States communication satellites but in 1969 Telesat Canada, an organization jointly own by the Government, the common carriers and the public, was established for the purpose putting a Canadian satellite in space (see p. 969).

Cable.—Basically, cable television is an antenna system linked to the individu subscriber's set by cable through a series of amplifiers, making it possible to bring the su scriber signals he could not otherwise obtain. Cable systems are also capable of carryi FM and AM radio signals. For this service the subscriber customarily pays an installati fee and a monthly rental of about $5 a month. Systems range from those with a f hundred subscribers to several with more than 30,000. Annual revenues of the cab systems at present run between $50,000,000 and $60,000,000 a year and are growing rapid

Cable television is recognized as part of the Canadian broadcasting system and policies l regulations that concern it must take into account the effects on other aspects of the tem. Cable systems (CATV) are operated by private companies each of which must be roved technically by the Department of Communications and licensed by the CRTC. e Commission recently decided to not license broadcasting receiving undertakings based the use of microwave or other technical systems for the wholesale importation of pro- ms from distant United States stations and thereby the enlargement of the Canadian ience and market areas of United States networks or stations, but to give particular ntion and help develop original programming. This decision rested on the conviction t there is in Canada the talent and the ability in the various fields of expression and wledge to make effective use of a complex communication system.

According to CRTC policy, cable television systems must give priority to Canadian work signals, independent Canadian stations and locally originated programming, uding educational broadcasts. Non-Canadian channels have a lower priority. Adver- ng is not permitted on cable systems, except advertising that is part of TV station adcasts picked up by the system. The expenses of local programming must come from scriber revenue.

As of Sept. 1, 1969, there were 317 cable television systems operating in Canada, ving 22.6 p.c. of all urban households in the country. This coverage represented a p.c. increase over the preceding year.

erations of the Canadian Broadcasting Corporation, 1969-70*

Programming.—In 1969-70 the CBC began to implement plans for an increase in adian programming. Although CBC schedules had always been predominantly adian, the rising costs of television had led to a greater dependence on commercial enue, and thus to prime-time scheduling on the English network of many of the mass- eal United States entertainment programs which are attractive to advertisers. The 0 schedules of the CBC's English television network included an additional seven hours eek of Canadian production, more than meeting the new "Canadian content" require- nts announced by the CRTC. The CBC planned to continue providing additional adian programs throughout its schedules over the next five years.

Among programs of particular interest during 1969 and 1970 were sports events such he NHL hockey playoffs, CFL football, the Canada Summer Games, Montreal Expos eball and the Commonwealth Games in Edinburgh; wildlife and conservation programs n in regular series and in specials such as "The Dying Waters"; news and documentary ures on China, Viet-Nam, the Canadian North, the Quebec Liberal leadership convention the Quebec provincial election; live coverage from Japan of Canadian participation in o 70; and programs on the Manitoba Centennial celebrations and the Royal visit to the thwest Territories and Manitoba. Special events relayed through other broadcasters uded the Apollo moon missions and landings, and the investiture of the Prince of Wales. our telecasting was increased during the year to an average of 55 hours weekly on the lish network and 51 hours weekly on the French network.

In radio, the CBC conducted a comprehensive study of its French and English services, recommendations for changes to meet the needs of the 1970s were submitted to the C Board of Directors.

The CBC continued to be the major employer of Canadian talent. During 1969, the poration's programs involved almost 30,000 Canadian artists, musicians, commentators, rs, actresses, and other performers. For these engagements the CBC paid out about 500,000 in talent fees.

The CBC Northern Service continued its medium and shortwave radio service to the ple of the Canadian North, and steadily increased its special programming for Indians

*Revised by the Supervisor of Audience Services of the Canadian Broadcasting Corporation.

and Eskimos, much of it in their own languages. Television in the North remained limi to the larger communities, served by means of videotaped program packages until t launching of the first Canadian communications satellite, *Anik*, expected to take pl within a few years (see p. 969). The CBC Board of Directors visited Northern Serv stations at Inuvik and Yellowknife in July 1970 and held public meetings to discuss t CBC service with local residents.

The CBC Armed Forces Service provided radio and television programs for Canadi forces personnel in Europe, Cyprus, Northern Canada and ships at sea, and arrange number of visits to Canadian Forces bases in Canada and abroad by groups of Canadi entertainers. Parts of the stage shows presented at these concerts were recorded a filmed for later broadcast.

Facilities and Coverage.—Nearly all Canadians are within reach of the CB national broadcasting service; CBC radio is available to about 98.6 p.c. of the populati and CBC television to about 96.6 p.c. The total number of public and private statio making up the CBC radio networks was more than 360 at Mar. 31, 1970. Outlets for t CBC television networks totalled more than 300. In those communities still unserv the CBC hopes to provide service as quickly as financial and technical resources permit.

During 1969-70, the CBC put into operation 17 new television transmitters, includi nine Frontier Coverage Packages providing taped service to isolated northern communiti and 19 new radio transmitters. Privately owned television stations were purchased Moose Jaw and Regina, enabling the CBC to provide full English network service and so local programming in southern Saskatchewan. Stereo broadcasting was introduced CBO-FM, the Ottawa station of the CBC-FM network. French-language television serv was extended to Edmonton with the opening in March 1970 of CBXFT, which also leas part of its program time for local educational programming in English. French-langua radio service was introduced in the Windsor area of Ontario through CBEF, which open in May 1970. A licence was granted for the CBC to provide and operate the techni facilities for a UHF television station in Toronto, opening in the fall of 1970, which wo transmit educational programs supplied and paid for by the Ontario Department of Ed cation.

Transmission and studio facilities were improved at a number of CBC locations, a work was in progress on a new production centre at Moncton. Construction was w advanced at Place de Radio Canada, future site of the CBC's scattered Montreal faciliti Plans for the expansion of shortwave transmission facilities at Sackville, N.B., were chan in the light of financial circumstances, and only two of the planned five new transmitt were expected to be operational by the original target date of 1971.

Negotiations were pursued with the newly created corporation Telesat Canada regardi the technical and financial aspects of CBC use of the planned Canadian domestic satell system.

Organization.—As part of a gradual administrative reorganization, CBC began t consolidation of its domestic broadcasting operations into two main language divisions: t French Services Division, centred in Montreal and responsible for domestic French-langua operations in all locations; and the English Services Division, centred in Toronto a responsible for all domestic operations in English. Formal implementation of the chan began in April 1970. The heads of these two divisions, and of the External Services Divisi formed earlier, report to the Executive Vice-President at the CBC head office in Ottaw Another organizational change in progress was the design of a computer-based Manageme Information System and a complementary PPBS (planning, programming and budgeti system) to increase the efficiency of CBC operations. In March 1970, CBC employe numbered about 8,950, a reduction from the previous year.

External Services.—During 1969-70, the CBC International Service (IS) marked its n anniversary. Daily shortwave broadcasts in 11 languages and totalling about program hours a week were beamed to Eastern and Western Europe, Africa, Australasia, in America, the United States and the Caribbean. They attracted an increasing ume of audience mail, and the quarterly program schedule was distributed to some ,000 listeners. For the third consecutive year, the German broadcasts of the IS were ed the most popular in the world by the Association of German Shortwave Listeners. rk was in progress on the Sackville development project, which provides for the eventual allation of five new 250-kw. transmitters. Recorded and taped programs of Canadian sic, documentaries and drama were distributed to radio organizations in more than countries. About 49,000 program hours of music were distributed by the transcription artment of the IS and some of these recordings were also released on the commercial rket in co-operation with various recording companies.

Sales of CBC programs to other countries included drama and ballet productions to T television in the United States; programs from the radio series "The Art of Glenn ld" to stations of the Educational Radio Network in the United States and to New land; popular drama and science series to television networks in Holland and Sweden; umber of music and drama programs to Britain, and the historical drama series Iberville" to various French-speaking countries. "Cinderella", a 1968 CBC television duction with the National Ballet of Canada, won a United States Emmy Award as the t classical music program of the year after its 1970 showing on the National Educational evision network in the United States.

During 1969 and 1970, the CBC was represented at the annual meeting of the Asian adcasting Union, was host for meetings of the Communauté des télévisions francophones the Communauté radiophonique des programmes de langue française, and participated he 8th Commonwealth Broadcasting Conference held in Jamaica. Radio and television productions were arranged with several foreign broadcasters in the areas of children's gramming, variety, music, opera, drama and documentary. A number of training achments with the CBC, some of them in co-operation with the Canadian International velopment Agency, were arranged for foreign broadcasting students.

The CBC acted as broadcasting consultant to the Canadian delegation attending a ESCO world meeting on satellite broadcasting in 1969, and continued to contribute to the t studies on satellites being prepared for the United Nations by Canada and Sweden. C liaison continued with other broadcasting organizations engaged in satellite broadting projects.

Finance.—Total operating expense for the year ended Mar. 31, 1970 was $208,033,000, increase of $11,500,000 or 5.9 p.c. over the previous year; this amount included ,182,000 for depreciation and amortization not recoverable from the Parliamentary ment. An amount of $48,909,000 was obtained from revenue (mostly advertising enue which grossed $47,033,000), a significant increase over the previous year. Of the l Parliamentary payment of $166,000,000, an amount of $148,942,000 was applied to et net operating expenditures, and $5,065,000 was applied to repayment of capital loans; surplus of $11,993,000 was carried forward to meet future operating expenditures. pital assets, after accumulated depreciation, totalled $115,000,000.

As a Crown corporation, the CBC was affected by Government budget restraints ing 1969 and 1970. The Parliamentary payment for operating the national broadting service in 1970-71 was frozen at the 1969-70 level, leaving commercial revenue as CBC's only means of increasing its income to meet rising costs and provide for additional

Canadian production. The problem was partly eased when the Government agreed to wording in the Appropriation Act for 1969-70 which made it possible for the Corporation carry over into 1970-71, as a reserve, the $12,000,000 it was able to save in 1969-70.

8.—**Financial Statement of CBC Operations, Years Ended Mar. 31, 1969 and 1970**

Item	1968-69	1969-70
	$'000	$'000
Expenses—		
Production and Distribution—		
Cost of programs	124,066	128,012
Network distribution	15,086	16,695
Station transmission	8,924	9,886
Payment to private stations	5,332	5,725
Commissions to agencies and networks	4,788	5,383
External services	3,953	4,326
Emergency broadcasting	506	418
Operational supervision and services	16,562	17,865
Selling and Administration—		
Selling expense	3,010	3,375
Engineering and development	1,703	1,675
Management and central services	7,795	8,605
Interest on loans	4,762	6,068
Totals, Expenses	**196,487**	**208,033**
Income—		
Parliamentary payment	144,374	160,935
Advertising revenue (gross)	39,566	47,033
Interest on investments	954	1,120
Miscellaneous	1,016	756
Totals, Income	**185,910**	**209,844**
Depreciation and amortization included with total expenses	10,577	10,182
	196,487	**220,026**
Surplus for the year	—	11,993

Statistics of the Broadcasting Industry*

Financial and other statistics of the radio and television broadcasting industry ar obtained by the Dominion Bureau of Statistics in co-operation with the Canadian Radi Television Commission; summary figures for private and CBC sectors are given in Table for the year 1969.

In 1969, 329 private radio stations and 67 television stations reported to DBS. Th operating revenue of the broadcasting industry for the year amounted to $252,506,891, a increase of 12.0 p.c. over 1968. Of the total, radio broadcasting accounted for $110,066,43 or 43.6 p.c. and television broadcasting for $142,440,456 or 56.4 p.c.; in 1968, radio receive $97,543,936 or 43.2 p.c. and television $127,987,695 or 56.8 p.c. Revenue from nation and network time sales represented 61.4 p.c. of the total broadcasting revenue and revenu from local time sales 38.6 p.c.; national and network time sales increased by 11.1 p.c local time sales by 15.5 p.c. and other incidental operating revenue by 1.0 p.c. over 196 Operating expenses in 1969 at $381,953,728 were 11.9 p.c. higher than in 1968. The growth revenues exceeded the growth of expenses and resulted in an operating profit of $36,623,16 in 1969 compared with one of $29,901,202 in 1968. After adjustment on account of othe income and expenses and income taxes, the final net profit of the private sector of the broad casting industry in 1969 was $17,744,962 compared with $17,107,000 in 1968.

* Prepared by the Transportation Division of the Dominion Bureau of Statistics.

-Operating Revenue and Expenses and Employee Statistics of the Radio and Television Broadcasting Industry, 1969

Item	Radio Stations			Television Stations			Total Radio and Television Stations
	Private	CBC	Total	Private	CBC	Total	
	$'000	$'000	$'000	$'000	$'000	$'000	$'000
erating Revenue—							
ales of air time[1]	105,679	1,963	107,642	93,932	35,130	129,062	236,704
Local	*64,578*	*679*	*65,257*	*24,175*	*2,001*	*26,176*	*91,433*
National	*40,603*	*628*	*41,231*	*58,562*	*11,236*	*69,798*	*111,030*
Network[2]	*498*	*656*	*1,154*	*11,194*	*21,893*	*33,087*	*34,242*
ncidental operating revenue	2,409	15	2,424	12,643	736	13,379	15,802
Totals, Operating Revenue	**108,088**	**1,978**	**110,066**	**106,574**	**35,866**	**142,440**	**252,507**
rliamentary grants[3]	—	37,068	37,068	—	129,002	129,002	166,070
Totals, Operating Revenue and Parliamentary Grants	**108,088**	**39,046**	**147,134**	**106,574**	**164,868**	**271,442**	**418,577**
erating Expenses—							
Direct remuneration	40,590	18,954	59,544	27,567	69,204	96,771	156,315
Fringe benefits	1,733	1,450	3,183	1,433	5,293	6,726	9,910
Talent fees	2,412	4,673	7,085	4,312	17,063	21,375	28,459
Raw film and audio tape, studio sets and props, and other materials and supplies	347	416	763	1,887	8,122	10,009	10,773
Remote facilities	343	—	343	346	—	346	689
News service, music recordings and transcriptions, and program rights and royalties	3,357	292	3,649	1,080	2,910	3,990	7,638
Amortization of feature films, syndicated and other programs	118	—	118	12,788	13,081	25,869	25,987
Program distribution and customs expenses	33	—	33	898	—	898	931
Network assessments	20	—	20	1,835	—	1,835	1,854
Other direct program expenses	1,114	772	1,886	1,103	3,317	4,420	6,306
Transmitter, studio and mobile unit tubes expenses	410	152	562	804	557	1,361	1,923
VTR heads, and tape expenses	82	—	82	979	—	979	1,061
Equipment parts and supplies, and other technical expenses	760	375	1,135	1,021	1,727	2,748	3,883
Line charges	565	2,822	3,387	251	9,393	9,644	13,031
Advertising, promotion and publicity	3,682	510	4,192	1,192	1,860	3,052	7,244
Rating services	431	138	569	380	502	882	1,450
Sales representatives commissions	10,092	60	10,152	5,371	221	5,592	15,744
Other selling, promotion and publicity expenses	771	—	771	557	—	557	1,328
Travel, entertainment, membership dues and subscriptions	2,540	609	3,149	1,511	2,225	3,736	6,886
Motor vehicle operating expenses	1,018	112	1,130	517	407	924	2,054
Rent of premises, and light, heat and power	2,913	961	3,874	2,091	3,511	5,602	9,476
Depreciation and amortization	4,582	2,366	6,948	6,984	9,464	16,448	23,396
Maintenance and repairs	1,178	306	1,484	941	1,116	2,057	3,541
Legal, audit and other professional fees	1,137	43	1,180	439	158	597	1,776
Doubtful accounts	804	2	806	249	8	257	1,064
Station and music licence fees	3,414	333	3,747	3,155	1,216	4,371	8,118
Equipment rental	385	105	490	432	382	814	1,303
Interest on obligations	1,343	1,138	2,481	1,160	4,157	5,317	7,798
Other operating expenses	7,220	2,457	9,677	3,364	8,974	12,338	22,015
Totals, Operating Expenses	**93,393**	**39,046**	**132,439**	**84,646**	**164,868**	**249,514**	**381,954**
t Operating Profit including Parliamentary Grants	**14,695**	—	**14,695**	**21,928**	—	**21,928**	**36,623**
erage monthly number of employees	6,292	1,827	8,119	4,114	7,308	11,422	19,541

[1] After deducting advertising agency commissions and trade discounts. [2] After deducting line and service arges. [3] The CBC charges its operations with depreciation. The charge so made has been added to the rliamentary grants.

Statistics of the Community Antenna Industry.—In 1967, for the first time, th Dominion Bureau of Statistics published statistics on the CATV industry in Canad summary results of which are given in Table **10**. The industry registered an increase i revenue in 1969 over 1968 of 19.5 p.c. from $31,285,513 to $37,379,909. Of the 1969 tota revenue from monthly service charges accounted for $33,440,283 or 89.5 p.c. A $4,844,25 increase in operating expenses in the later year was attributable mainly to an increase o $2,178,136 for salaries, wages and bonuses. However, operating revenue exceeded expense resulting in an operating profit of $6,101,492 as compared with a profit of $4,851,348 in 196

10.—Revenue, Expense and Employee Statistics of the CATV Industry, 1967-69

Item	1967	1968	1969
	$	$	$
Operating Revenue—			
Installation charges	2,030,944	2,443,015	2,870,203
Monthly service charges	19,092,900	27,917,186	33,440,283
Other operating revenue	990,846	925,312	1,069,423
Totals, Operating Revenue	**22,114,690**	**31,285,513**	**37,379,909**
Operating Expenses—			
Interest charges	1,529,552	1,715,728	2,427,795
Depreciation	5,233,908	6,158,668	6,603,342
Rent, repairs, maintenance and electricity	3,643,380	4,641,383	4,954,595
Salaries and wages	5,202,641	6,940,514	9,118,650
Staff benefits	164,964	214,998	350,452
Professional services, management fees, and other outside services	1,216,666	1,186,714	2,040,325
Advertising, promotion and travel	709,830	1,076,116	1,754,796
Taxes (excluding income tax) and travel	193,220	449,447	458,825
Office and other operating expenses	2,568,866	4,050,597	3,569,637
Totals, Operating Expenses	**20,463,027**	**26,434,165**	**31,278,417**
Net operating income	1,651,663	4,851,348	6,101,492
Net of other income and expenses	−46,602	85,118	−442,080
Less: provision for income taxes	1,131,380	3,133,071	3,381,513
Net income after taxes	473,681	1,803,395	2,277,899
Average monthly number of employees	1,057	1,367	1,601

Section 3.—The National Film Board*

The National Film Board, an agency of the Federal Government, was established by Act of Parliament in 1939 and reconstituted by the National Film Act in 1950—its function "to initiate and promote the production and distribution of films in the national interest" The Board's films are produced in Canada's two official languages and, during the thirty years of production, have made a considerable contribution to the country's culture and to the national identity.

* Statistics relating to the over-all motion picture industry in Canada are given in Chapter XXI, pp. 1019-1021.

In addition to 35mm and 16mm films, the Board produces and distributes other visual s materials—filmstrips, 8mm loop films, slide sets, overhead projectuals, multi-media s and photo stories.

The growing sophistication of film audiences and the increasing importance of film as neans of communication are reflected in the nature of films produced—features, documen-ies, informational films, films for the specific needs of government departments, and films signed for particular social purposes. The Board strives to serve as innovator of new ema techniques, as well as a recorder of the nation's day-to-day evolution. Thus, new eds and greater public sensitivity have encouraged the Board's film-makers to explore w filmic styles and to experiment in new areas of film production. There have been responding new departures in the distribution and use of films, as more people turn to ns as a matter of course for information and assistance in many activities.

In Canada, the Board's productions are distributed through community outlets, ools and universities, television stations, theatres and commercial sales. In all of these as annual figures show a steady, in some instances a marked, increase. A large part of 16mm community film audience is reached through film libraries, film councils and special erest groups. The growing appetite for films can be attributed to the wide range of oject matter available. The Board's catalogue, produced by its Publicity Division, lists ne sixty main and sub-categories. Original films are shown regularly over English-guage and French-language television networks in Canada as well as in cinemas, mainly ough the Columbia Pictures chain.

Distribution outside Canada has also continued to increase. Films abroad may be ained through the Board's offices in London, Paris, New Delhi, Tokyo, Buenos Aires, w York, and from posts of the Departments of External Affairs and of Industry, Trade l Commerce. Recent figures show a total world audience exceeding 60,000,000 from latter sources alone, and exhibition in cinemas in over 100 countries. Films are sioned in more than 40 languages to increase their usefulness in foreign countries. Part he Board's external distribution program is in support of Canada's tourist industry and this end it distributes, particularly in the United States, films produced by provincial vernments and companies engaged in the travel industry.

The Board, in its mandate to "interpret Canada to Canadians and to the rest of the rld", seeks to reflect the interests of the Canadian people and those shared with other ple around the world. That demand for the Board's films grows by about 33 p.c. a r would indicate that this mandate is being fulfilled.

Section 4.—Postal Service

The basic tasks of the Canadian Postal Service are to receive, convey and deliver postal tter with speed and security, for which duties it maintains thousands of post offices and lizes air, rail, road and water transportation facilities. Associated functions include the e of stamps and other articles of postage, the registration of letters and other mail for patch, the insuring of parcels, the accounting of COD articles and the transaction of ney-order business. Also, because of its transcontinental facilities, the Post Office sts other government departments with such tasks as selling unemployment insurance mps and hunting permits, collecting government annuity payments, distributing income forms and Public Service employment application forms, and displaying government ters.

Post offices are established wherever the population warrants. Those in rural areas l small urban centres transact all the functions of a city office. In larger urban areas, tal stations have full functions similar to the main post office, including general delivery vice, lock-box delivery and letter-carrier delivery. Much sophisticated automatic ipment has been installed in Canada's larger post offices, which could be described as

complex semi-automated plants. Such devices include conveyors and chutes, parcel and bag sorting machines, photo-electric counters, intercom systems, observation gallery telephone systems and industrial music. Outside the post office building, mailmobiles, automatic stamp-vending machines and curbside mail boxes are in use.

The operating service of the Post Office Department is organized into four regions, each headed by a General Manager reporting directly to the Deputy Postmaster General. The regions are further divided into districts, each headed by a District Director. The operating and support functions required in the provision of postal service to the public are the responsibility of the local postmasters who receive technical and administrative assistance from district and regional offices at strategic points.

Postal service is provided in Canada from Newfoundland to the west coast of Vancouver Island and from Pelee Island, Ont., in the south, to settlements and missions far into the Arctic. Canada's airmail system utilizes most transcontinental flights, supported by many branch and connecting lines, and links up with the United States domestic and other international airmail systems. First class domestic mail is carried by air between Canadian points, whenever delivery can thus be expedited. Air stage routes provide an all-class mail service to many northern areas which can only be served by air. There are over 46,000 miles of airmail and air stage routes.

At Mar. 31, 1970, there were 9,575 post offices in operation; letter-carrier delivery was being provided in 245 urban areas and 5,220 private contractors were delivering mail to 731,544 rural and suburban households. In 1970, there were 644 city mail services transporting mail between post offices and postal stations, collecting mail from street letter boxes and delivering parcel post, and some 441 side services were transporting mail between post offices and railway stations, wharves and airports. Intercity transportation of mail by highway motor vehicles was being conducted by 626 major services, complemented by 1,117 feeder or stage services operating to and from smaller centres. Although many of the highway services have replaced rail for the transportation of mails, rail remained the principal mode for long-distance movements of other than first-class matter.

Revenue and expenditure of the Post Office Department for the five years ended Mar. 31, 1970 are shown in Table **11**; gross revenue receipts are received mainly from postage, either in the form of postage stamps and stamped stationery, or postage meter and postage register machine impressions. Some postage is also paid in cash without stamps, stamped stationery or meter and register impressions.

11.—Revenue and Expenditure of the Post Office Department, Years Ended Mar. 31, 1966-70

Year Ended Mar. 31—	Revenue	Expenditure	Deficit
	$	$	$
1966	285,100,000	315,800,000	30,700,000
1967	305,400,000	353,100,000	47,700,000
1968	337,023,000	404,214,000	67,191,000
1969	374,902,000	465,233,000	90,331,000
1970	444,069,000	497,017,000	52,948,000

In the year ended Mar. 31, 1970, post office money orders, issued for any amount not exceeding $100 and payable in almost any country of the world, were sold at 9,078 post offices and money orders payable in Canada only, for amounts not exceeding $15.99, were

l at some 427 additional post offices. During the year, 50,656,428 money orders were ıed having a value of $1,005,774,964, of which $978,491,340 was payable in Canada and ,283,624 was payable in other countries. The value of money orders issued in other ntries and payable in Canada was $8,234,306.

Section 5.—The Press*

The freedom of the public in Canada is strenuously exercised by an omnipresent press. ily newspapers published in the country in 1970 numbered 120, counting morning and ning editions separately. Combined circulation was about 4,572,000—84 p.c. in glish and 16 p.c. in French. Publishers' surveys show that each newspaper is read by average of three persons.

Daily newspaper advertising revenue in 1968 was $260,072,060 and circulation revenue s $97,259,000. By comparison, advertising revenue of 319 private radio stations in nada in 1968 was $93,389,000 and of 68 private television stations $88,566,000. In 1970, re were 14 daily newspapers with circulation in excess of 100,000, accounting for about p.c. of total circulation. There were 12 dailies published in the French language, 10 of m located in Quebec. Although the circulation of daily newspapers blankets the more ɔulous areas well beyond publishing points, smaller cities and towns and rural areas also served by 818 weekly newspapers catering to local interests and exercising important al influence. The Canadian society is also enriched by 89 ethnic daily or weekly news- ɔers published in many languages, often sprinkled with English.

About 60 p.c. of Canada's daily newspapers are privately owned or independent. ere are three major newspaper chains in the country, owned by Southam Press Ltd. dailies), Thomson Newspapers Ltd. (27 dailies) and FP Publications Ltd. (eight dailies). th Southam and Thomson Newspapers are publicly owned companies with shares traded Canadian stock exchanges. Papers in the Thomson chain are concentrated in the smaller es. FP accounts for about 19 p.c. of total daily circulation, Southam for 18 p.c. and omson for about 8 p.c.

In addition to their own news-gathering staffs and facilities, Canadian newspapers ɔscribe to a number of syndicated agencies and wire services, the largest being The nadian Press which is a co-operative agency owned and operated by Canadian dailies. rgely by teletype and wirephoto transmission, it provides its 102 member newspapers with rld and Canadian news and also serves weekly newspapers and radio and television tions. CP has its own news-gathering staff and each member newspaper provides the ency with important local news for transmission to fellow members and members share e cost in ratio to their circulations.

CP carries world news from Reuters (the British agency), from Associated Press (the ited States co-operative) and from Agence France-Presse (of France) and these agencies e offered CP news on a reciprocal basis. CP maintains a French-language service in ebec.

United Press International of Canada, the second major news wire service in Canada, private company and a part of United Press International World Service. It provides nadian and international news and pictures to about 40 subscribers in Canada and is an let for Canadian news through United Press International facilities throughout the world. tain foreign newspapers maintain bureaus in Ottawa and elsewhere in Canada to collect l interpret Canadian news.

* An article in the 1957-58 Year Book traces developments in Canadian journalism from their beginnings in 1752 circa) 1900. A second article appearing in the 1959 edition brings that account up to 1958.

Press Statistics.—The following tables are based on data estimated from *Canadian Advertising*. Circulation figures are given for daily English-language and French-language newspapers only. Such circulation figures are relatively easy to obtain because, in their own interest, newspapers qualify for and subscribe to the Audit Bureau of Circulation. For these, ABC 'net paid' figures have been used; 'controlled' (free) distribution newspapers are not included. On the other hand, circulation data for foreign-language newspapers, weekly newspapers, weekend newspapers and magazines are incomplete and therefore not usable.

12.—Estimated Numbers and Circulations of Reporting English-Language, French-Language and Foreign-Language Newspapers, by Province, 1969 and 1970

Province or Territory	1969				1970			
	Daily		Weekly[1]	Weekend	Daily		Weekly[1]	Weekend
	No.	Circulation[2]	No.	No.	No.	Circulation[2]	No.	No.
	English-Language Newspapers							
Newfoundland	3	37,724	5	1	3	41,685	5	1
Prince Edward Island	3	29,667	—	—	3	28,813	—	—
Nova Scotia	6	162,523	31	—	6	160,212	33	—
New Brunswick	5	102,123	15	—	5	102,780	14	—
Quebec	4	341,193	18	2	4	327,607	18	2
Ontario	47	1,906,446	244	5	48	1,928,251	242	4
Manitoba	7	235,102	62	—	7	239,548	60	—
Saskatchewan	4	124,888	96	—	4	132,574	92	—
Alberta	7	314,235	80	—	7	332,832	84	—
British Columbia	15	525,127	95	—	15	536,032	98	—
Yukon and Northwest Territories	1	..	2	—	—	—	3	—
Totals	**102**	**3,779,028**	**648**	**8**	**102**	**3,830,334**	**649**	**7**
	French-Language Newspapers							
Nova Scotia	—	—	1	—	—	—	1	—
New Brunswick	1	7,633	3	—	1	7,920	3	—
Quebec	10	725,135	151	17	10	698,455	150	18
Ontario	1	37,566	5	—	1	34,951	5	—
Manitoba	—	—	1	—	—	—	1	—
Saskatchewan	—	—	6	—	—	—	6	—
Alberta	—	—	2	—	—	—	2	—
British Columbia	—	—	—	—	—	—	1	—
Totals	**12**	**770,334**	**169[3]**	**17**	**12**	**741,326**	**169[4]**	**18**
	Foreign-Language Newspapers[5]							
Quebec	—	—	13	—	—	—	14	—
Ontario	2	..	49	—	3	..	53	—
Manitoba	—	—	14	—	—	—	11	—
Alberta	—	—	2	—	—	—	1	—
British Columbia	3	..	4	—	3	..	4	—
Totals	**5**	..	**82**	—	**6**	..	**83**	—

[1] Includes semi-weeklies, tri-weeklies and bi-weeklies. [2] Circulation not reported for all newspapers. [3] Includes 47 bilinguals—New Brunswick 2, Quebec 39, Ontario 2 and Saskatchewan 4. [4] Includes 50 bilinguals—New Brunswick 2, Quebec 42, Ontario 2 and Saskatchewan 4. [5] All daily and weekly foreign-language publications given here are considered to be newspapers.

3.—Estimated Numbers and Circulations of Reporting English-Language and French-Language Newspapers Published in Urban Centres of Over 30,000 Population, 1969 and 1970.

Urban Centre	Households (Census 1966)	1969			1970		
		Daily		Weekly	Daily		Weekly
	No.	No.	Circulation	No.	No.	Circulation	No.
English-Language Newspapers							
lleville, Ont.	9,287	1	15,658	—	1	16,138	1
ampton, Ont.	9,184	1	7,711	1	1	7,590	1
antford, Ont.	17,395	1	25,716	—	1	26,237	—
rlington, Ont.	17,171	—	—	2	—	—	2
lgary, Alta.	94,941	2	130,458	1	2	137,040	1
atham, Ont.	9,304	1	14,816	—	1	14,777	—
rnwall, Ont.	11,783	1	14,186	—	1	14,516	—
rtmouth, N.S.	13,937	—	—	1	—	—	1
monton, Alta.	105,016	1	142,051	1	1	153,588	2
lt, Ont.	9,303	1	13,467	—	1	13,413	—
anby, Que.	8,622	—	—	1	—	—	1
elph, Ont.	13,876	1	16,788	—	1	17,519	—
lifax, N.S.	21,617	2	117,240	3	2	114,524	2
milton, Ont.	84,540	1	124,152	2	1	125,524	2
ngston, Ont.	16,419	1	27,640	1[1]	1	28,249	1[1]
tchener, Ont.	26,192	1	50,479	—	1	52,604	—
thbridge, Alta.	10,644	1	19,766	—	1	20,108	—
ndon, Ont.	56,368	2	122,546	1	2	119,851	—
ncton, N.B.	11,605	2	32,470	—	2	32,866	—
ntreal, Que.	368,669	2	327,811	3[2]	2	315,330	3[2]
ose Jaw, Sask.	10,087	1	9,153	—	1	8,944	—
w Westminster, B.C.	12,281	1	26,219	1	1	25,876	1
agara Falls, Ont.	15,725	1	17,934	—	1	18,216	—
kville, Ont.	13,452	1	7,580	2[3]	1	7,634	1
awa, Ont.	21,751	1	23,090	—	1	23,274	—
terborough, Ont.	81,703	2	158,839	—	2	161,425	1
bec, Que.	15,456	1	26,354	1	1	24,421	1
gina, Sask.	44,589	1	4,749	—	1	4,214	—
Catharines, Ont.	37,314	1	60,345	—	1	65,426	—
James, Man.	27,203	1	34,268	—	1	34,086	—
John's, Nfld.	9,918	—	—	—	—	—	1
nt John, N.B.	16,563	2	30,880	1[1]	2	34,278	1[1]
nia, Ont.	14,075	2	53,186	1	2	53,387	1
katoon, Sask.	15,058	1	18,274	1	1	18,565	1
lt Ste Marie, Ont.	33,224	1	47,304	—	1	50,094	—
winigan, Que.	18,626	1	20,800	—	1	20,927	—
rbrooke, Que.	7,320	—	—	1	—	—	1
bury, Ont.	19,101	1	8,633	—	1	8,063	—
dney, N.S.	21,486	1	33,584	—	1	34,331	—
nder Bay, Ont.	7,615	1	27,137	1	1	27,145	1
ronto, Ont.	26,051	2	32,003	—	2	31,927	—
is-Rivières, Que.	178,525	4	861,558	9[4]	4	876,632	10[4]
ncouver, B.C.	14,123	—	—	1	—	—	1
toria, B.C.	138,449	2	359,730	3	2	369,569	4
nland, Ont.	20,795	2	69,504	2	2	70,662	4
ndsor, Ont.	10,625	1	19,054	—	1	19,202	—
nnipeg, Man.	53,687	1	87,722	1	1	85,410	—
	77,930	2	207,861	2	2	212,218	2
French-Language Newspapers							
coutimi, Que.	6,377	—	—	2	—	—	2
rnwall, Ont.	11,783	—	—	1	—	—	1
monton, Alta.	105,016	—	—	1	—	—	1
nby, Que.	8,622	1	11,217	1	1	11,207	1
l, Que.	14,654	—	—	2[3]	—	—	2[3]
ques-Cartier, Que.	11,574	—	—	1	—	—	—
hine, Que.	11,775	—	—	1[5]	—	—	1[5]
alle, Que.	13,232	—	—	1[5]	—	—	1[5]
al, Que.	44,831	—	—	2[6]	—	—	2[5]
icton, N.B.	11,605	1	7,633	—	1	7,920	—

For footnotes, see end of table, p. 994.

13.—Estimated Numbers and Circulations of Reporting English-Language and French-Language Newspapers Published in Urban Centres of Over 30,000 Population, 1969 and 1970—concluded.

Urban Centre	Households (Census 1966)	1969			1970		
		Daily		Weekly	Daily		Weekly
	No.	No.	Circulation	No.	No.	Circulation	No.
		French-Language Newspapers—concluded					
Montreal, Que.	368,669	4	443,589	29[7]	4	434,945	30[8]
Ottawa, Ont.	81,703	1	37,566	—	1	34,951	—
Quebec, Que.	44,589	3	186,423	3[3]	3	169,801	3[3]
St. Boniface, Man.	11,205	—	—	1	—	—	1
Ste. Foy, Que.	11,021	—	—	1	—	—	1
St. Laurent, Que.	15,865	—	—	1[5]	—	—	1[5]
Shawinigan, Que.	7,320	—	—	2	—	—	2
Sherbrooke, Que.	19,101	1	36,731	1	1	37,656	—
Sudbury, Ont.	21,486	—	—	1	—	—	1
Trois-Rivières, Que.	14,123	1	47,175	1	1	44,846	1
Vancouver, B.C.	138,449	—	—	—	—	—	1
Verdun, Que.	22,405	—	—	1[5]	—	—	1[5]

[1] Weekend newspaper. [2] Includes two weekend newspapers. [3] Includes one weekend newspaper. [4] Includes three weekend newspapers. [5] Bilingual. [6] Includes one bilingual. [7] Includes 14 bilingual weeklies and 15 weekend newspapers. [8] Includes 13 bilingual weeklies and 16 weekend newspapers.

14.—Estimated Numbers of Foreign-Language Publications, 1969 and 1970

Language	1969	1970	Language	1969	1970
	No.	No.		No.	No.
Arabic	1	1	Latvian	1	1
Byelorussian	1	1	Lithuanian	3	3
Chinese	4	4	Maltese	1	1
Croat	3	4	Norwegian	1	1
Czech	2	2	Polish	3	3
Danish	1	1	Portuguese	6	6
Dutch	8	8	Serbian	3	3
Estonian	2	2	Slovak	2	3
Finnish	2	2	Slovenian	1	1
German	11	11	Spanish	1	1
Greek	8	8	Swedish	3	3
Hungarian	10	8	Ukrainian	20	19
Icelandic	1	1	Yiddish	4	4
Italian	11	12			
Japanese	2	2	**Totals**	**116**	**116**

15.—Estimated Numbers of Magazines and Related Publications, by Broad Classifications, 1969 and 1970

Classification	1969	1970	Classification	1969	1970
	No.	No.		No.	No.
Agricultural and rural	56	58	Professions (engineering, architecture, law, accountancy, photography, etc.)	31	29
Construction	19	16	Religious	30	27
Educational	123	124	Services and directories	99	101
Finance and insurance	19	20	Sports and entertainment	86	83
Government and government services	23	23	Trade, industry and related publications	205	200
Home, social and welfare	48	56	Transportation and travel	47	44
Labour	11	9	Miscellaneous	21	17
Pharmaceutical, medical, dental and nursing	59	60	**Totals**	**877**	**867**

Revenue from Printing and Publishing.—One of the industrial groups for which formation is collected by the DBS in its annual Census of Manufactures is the printing, ıblishing and allied industries group which includes establishments engaged primarily in ıe publishing and printing of newspapers, magazines, periodicals, books, almanacs, maps, ıides and the like, as well as establishments printing such publications for publishers, ıblishing firms that do no printing, and engraving, stereotyping and allied industries. f interest in connection with press statistics is the amount of revenue received by these dustries from advertising and from subscriptions or sales, which is given for the years 967 and 1968 in Table **16**. Additional data on manufacturing activity of this industrial roup are included in Chapter XVI on Manufactures.

16.—Revenue from Advertising and from Subscriptions or Sales of Newspapers, Periodicals and Books, 1967 and 1968

Classes	1967			1968		
	Net Revenue[1] from—			Net Revenue[1] from—		
	Advertising	Subscriptions and Sales	Total	Advertising	Subscriptions and Sales	Total
	$'000	$'000	$'000	$'000	$'000	$'000
ewspapers and Periodicals—						
Newspapers, daily	239,810	89,214	329,024	260,072	97,259	357,331
Retail	*126,705*	...	...	*142,056*	...	...
Classified	*54,133*	...	...	*61,605*	...	...
National	*58,972*	...	...	*56,411*	...	...
Newspapers, national weekend	17,886	9,830	27,716	17,227	8,826	26,053
Local	*1,838*	...	...	*1,412*	...	...
National	*16,047*	...	...	*15,815*	...	...
Newspapers, weekly, semi-weekly, tri-weekly, etc.	40,970	13,183	54,153	46,608	15,063	61,672
Local	*33,130*	...	...	*35,844*	...	...
National	*7,839*	...	...	*10,765*	...	...
Controlled distribution weekly newspapers	1,815	231	2,046	3,294	195	3,489
Local	*1,583*	...	...	*3,057*	...	...
National	*232*	...	...	*237*	...	...
Magazines of general circulation	22,940	12,739	35,679	23,765	14,804	38,568
Telephone and city directories[2]	40,150	2,393	42,544	43,330	2,671	46,001
Trade, technical, professional and financial publications	32,429	7,133	39,562	28,067	7,061	35,129
Agricultural publications	6,036	1,034	7,070	5,893	1,954	7,847
Religious publications	484	4,372	4,857	517	4,809	5,326
School and collegiate publications	147	1,018	1,165	246	455	701
Fraternal publications	340	366	706	352	387	738
Juvenile publications	12	205	217	} 2,339	3,175	5,515
All other periodicals	2,717	3,322	6,039			
Totals, Newspapers and Periodicals	**405,736**	**145,041**	**550,778**	**431,710**	**156,659**	**588,370**
ooks—						
Books published and printed	...	20,775	20,775	...	17,410	17,410
Books published only	...	31,487	31,487	...	36,392	36,392
Totals, Books	...	**52,261**	**52,261**	...	**53,802**	**53,802**

[1] Net revenue from advertising excludes commissions paid to recognized advertising agencies and all cash discounts; net revenue from subscriptions and sales excludes commissions paid to indirectly employed sales agents who are not regular employees. [2] Includes telephone directories published by telephone companies.

CHAPTER XXI.—DOMESTIC TRADE AND PRICES

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

PART I.—THE MOVEMENT AND MARKETING OF COMMODITIES

Domestic trade is broad in terms of scope, complex in terms of activity, and volatile in the forms it takes. It encompasses all values added to commodities by agencies and services connected with the warehousing, distribution and sale of goods within each province as well as between provinces. Domestic trade is engaged in or facilitated by manufacturers, wholesale and retail establishments, mail-order houses, service trades, warehouse operators and other distributors, and by such "outside" agencies as banks, insurance companies, railway and trucking companies, advertising agencies and market research houses.

In recent years, a considerable degree of interest and speculation has been focused on the service trades, which embrace a wide spectrum of activities engaged in by professional, business and personal service establishments. Included also are the amusement and recreation services, which include regular and drive-in movie theatres, bowling alleys, health clubs, golf courses, race tracks and other sports activities, and the fast-growing accommodation and food service fields, comprising hotels, motels, tourist facilities, restaurants and drive-in "fast food" outlets.

The degree of interest being shown in the services field is further indicated by the number of trades to be surveyed for the first time in the 1971 Census. These include, in the amusement and recreation services group, marinas, ski facility operators, driving ranges and miniature golf courses; and, in the business services group, computer services, media representatives, architects, professional engineers and other engineering and scientific services, lawyers and notaries, and management and business consultants. However, services provided by doctors, dentists, nurses, hospitals and educational institutions remain outside the scope of the Census of Merchandising and Services.

Only certain phases of the broad and ever-widening field of domestic trade (mainly e retail, wholesale and service trades) are covered in this Chapter but, wherever possible, ferences are given to related material appearing elsewhere in this publication. The rangement of material in a volume such as the Year Book is governed by the necessity interpretation from various perspectives. The Index will be found useful in this respect.

Section 1.—Merchandising and Service Establishments*

Data on merchandising and service establishments are derived principally from a riodic census (or full-coverage survey) of such business establishments. The first census as taken in 1931, followed by similar censuses in 1941, 1951 and 1961. The reports for 61, which provided a wider range of data than any previous census, contained information sales, inventory and credit; gross margins and operating expenses; small geographic area ta; and, for "establishments" only (definition below), an analysis of sales by commodities.

The 1961 Census marked the end of the decennial census program. Commencing with 66, the censuses of merchandising and service establishments became part of a quin- ennial series in order to provide more frequent survey benchmarks and to enable publi- tion of more up-to-date statistics than was previously possible. Subsection 1 gives mmary results of the 1966 Census, covering retail and service trades.

Each census, as it is completed, forms a new base for the various intercensal (monthly, arterly and annual) surveys of retail, wholesale and service trades; some are sample rveys and others are carried out on a full-coverage basis. Subsection 2 contains current tercensal information obtained as a result of these surveys, relative not only to the dis- butive trades but to other statistical series (i.e., consumer credit) as well. It should be ted that most of these data have now been converted from a 1961 to a 1966 base. Where visions have not yet been completed, the data may be secured, as they are compiled, from e Merchandising and Services Division.

Subsection 1.—1966 Census of Merchandising and Services

etail Trade†

The results of the 1966 retail trade census, particularly in the smaller geographic areas, flect the changes—both institutional and definitional—that took place between 1961 and 66 in the structure of retailing. The advent of new shopping areas, whether in the form planned multi-purpose establishments or as single, highly diversified stores, had a signifi- nt effect on retail trade. So, too, did urban redevelopment and the construction of new tail outlets outside the corporate boundaries of cities and towns.‡

Although no classification changes were made during the 1961-66 period which could ve altered the scope of retailing, there were a number of definitional changes *within* e retail universe that affected the comparability of certain statistical series (see Table 1) 1966. In addition, two new classifications were created, further complicating e problem of direct comparison with earlier data. Details of the changes are as follows:—

1. In order to more accurately describe the realignment of activities that had taken place within retail food stores during the mid-1960s, a new classification of "grocery, confec-

* Prepared in the Merchandising and Services Division, Dominion Bureau of Statistics.

† *1966 Census of Canada*, Vol. VI, *Retail Trade* (location series, Catalogue Nos. 97-602 to 97-606; establishment es, Catalogue Nos. 97-607 and 97-608). For the purpose of the census, a *location* is defined as "a recognizable place usiness in which the principal activity is the display and sale of goods to the general public for personal or house- d consumption". In other words, the location series provides aggregate data on the physical locations in which iling activities actually take place. The *establishment*, on the other hand, is "the smallest unit which is a separate rating entity capable of reporting those elements of input and output necessary to the calculation of gross margin, well as employment, wages and salaries". The location is *not* dependent on the system of accounting; the estab- ment is.

‡ For purposes of analysis and research, the reader is referred to DBS *Market Research Handbook*, 1969 ed. (Cata- ue No. 63-514), published by the Merchandising and Services Division. This volume contains detailed informa- , particularly for small geographic areas, on population, housing, income, agriculture, manufacturing, and the il and service trades.

tionery and sundries stores" was introduced. This classification largely replaced the o "confectionery stores" category (the remainder of which was then combined with "canc and nut stores") and encompassed as well an unknown number of stores formerly classifi as "grocery stores, without fresh meat". Although this change affected the internal distr bution of "food stores", the group as a whole remains comparable with the 1961 results.

2. A major change in definition occurred in the department store category, details of whi may be found in *1966 Census of Canada*, Vol. VI, "Retail Trade: Introduction and Gener Review", Catalogue No. 97-601. Briefly, the data now reflect a "pure" department sto concept, both at the *location* and *establishment* levels. All non-department store activitie including mail order and catalogue sales offices, have been reclassified to more appropria kinds of business, i.e., general merchandise stores, women's clothing stores, etc. An i portant change in treatment was accorded the sales of concessions located in departme store outlets. Prior to 1966, concessions were tabulated and counted as separate "stores" their own kind of business; as a result of the new definition, however, sales of concessio were generally included *in the total business of department stores in which they were situate* These changes make direct comparison with related trade results in 1961 either difficult impossible.
3. Another new census classification introduced in 1966 was "home and auto supply stores", which no one commodity group can account for more than 50 p.c. of total sales. The stores can be added to the more specialized classification from which they stemme "accessories, tire and battery stores", in order to achieve comparability with 1961.

Table 1 shows the growth in retail trade from 1961 to 1966, stratified by kind-o business groups (used in intercensal surveys) and giving a comparison of 1966 data (when calculated using 1961 definitions, (2) as published, and (3) with post-censal corre tions included. Table 2 gives summary data on retail trade by kind of business in 196 figures for urban centres of 30,000 population or over are published in DBS Bulletin *196 Census of Canada, Retail Trade,* (Catalogue No. 97-602).

1.—Value of Retail Trade and Percentage Change, by Kind-of-Business Group and by Province, 1961 and 1966 Censuses

(Location series)

Kind of Business and Province	1961 Census	1966 Census (1961 definitions)	Percentage Change 1961–66	1966 Census (1966 definitions)	1966 Census (post-censal corrections)	Percentag Change 1961–66[1]
	$'000	$'000		$'000	$'000	
Grocery and combination stores	3,703,787	5,207,550[2]	+40.6	5,351,614[3]	5,351,614	+35.1
All other food stores	594,453	698,304[2]	+17.5	553,744	553,744	
Department stores	1,550,618	2,143,616	+38.2	1,973,727	1,973,727	...
General stores	607,368	510,287	−16.0	557,884	557,884	...
Variety stores	373,879	589,634	+57.7	494,202	494,202	...
Motor vehicle dealers	2,598,816	4,337,819	+66.9	4,337,822	4,337,822	+66.9
Service stations and garages	1,492,121	1,873,758	+25.6	1,873,544	1,873,544	+25.6
Men's clothing stores	246,904	379,863	+53.9	357,363	357,363	+44.7
Women's clothing stores	315,017	421,497	+33.8	418,883	435,088	+38.1
Family clothing stores	250,942	393,161	+56.7	398,001	337,544	+34.5
Shoe stores	195,179	268,891	+37.8	251,971	251,971	+29.1
Hardware stores	299,619	359,945	+20.1	357,409	355,837	+18.8
Furniture, TV, radio and appliance stores	572,451	733,850	+28.2	739,835	739,835	+29.2
Fuel dealers	346,691	475,217	+37.1	475,216	475,216	+37.1
Drug stores	467,281	674,351	+44.3	648,223	649,795	+39.1
Jewellery stores	144,922	193,755	+33.7	191,635	191,635	+32.2
All other stores	2,312,902	3,416,561	+47.7	3,705,345	3,749,597	...
Totals, All Stores	**16,072,959**	**22,678,059**	**+41.1**	**22,686,418**	**22,686,418**	**+41.1**
Newfoundland	285,568	405,607	+42.0	405,607	405,607	+42.0
Prince Edward Island	78,801	107,644	+36.6	107,642	107,642	+36.6
Nova Scotia	580,335	752,979	+29.8	752,989	752,989	+29.8
New Brunswick	435,806	594,679	+36.4	594,806	594,806	+36.5
Quebec	4,107,953	5,880,561	+43.1	5,882,111	5,882,111	+43.2
Ontario	6,206,685	8,621,924	+38.9	8,625,423	8,625,423	+39.0
Manitoba	766,711	1,005,708	+31.2	1,006,480	1,006,480	+31.3
Saskatchewan	734,493	1,046,646	+42.5	1,046,647	1,046,647	+42.5
Alberta	1,272,394	1,757,352	+38.1	1,758,076	1,758,076	+38.2
British Columbia[4]	1,604,204	2,504,959	+56.1	2,506,637	2,506,637	+56.3

[1] Using the corrected data. [2] Sales of "grocery, confectionery and sundries stores" were allocated to ea group using estimation procedures. [3] Includes "grocery, confectionery and sundries stores". [4] Includ the Yukon and Northwest Territories.

2.—Summary Statistics of Retail Trade, by Kind-of-Business Group and Selected Trades, 1966 Census

(Location series)

Kind of Business	Stores	Sales	Inventory at End of Year	Working Proprietors	Paid Employees	
					Last Week of November	Total Payroll for Year
	No.	$'000	$'000	No.	No.	$'000
Food	**46,220**	**5,905,358.2**	**332,803.3**	**42,208**	**138,636**	**379,793.3**
Bakery products stores	3,148	110,398.6	1,517.0	2,390	6,254	13,381.8
Candy, nut and confectionery stores	959	26,934.3	1,606.5	612	1,677	2,710.4
Dairy products stores	953	43,487.5	2,079.2	738	1,814	4,522.9
Egg and poultry stores	83	7,484.2	143.3	89	154	408.9
Fruit and vegetable stores	681	46,659.0	1,948.5	734	1,042	2,540.0
Groceries, confectionery and sundries stores	10,709	329,582.2	30,017.1	10,765	5,931	10,230.0
Grocery stores, without fresh meat	13,468	583,403.2	53,507.4	13,597	9,373	18,728.7
Grocery stores, with fresh meat	12,748	4,438,628.7	233,091.1	9,897	104,678	303,441.3
Meat markets	2,622	271,269.4	5,864.6	2,579	6,188	20,114.4
Fish markets	187	8,047.0	309.6	186	181	467.4
Delicatessen stores	474	31,438.2	1,737.2	456	1,055	2,598.2
Other food stores	188	8,025.9	981.8	165	289	649.3
General Merchandise	**9,231**	**3,626,300.4**	**565,886.5**	**5,898**	**184,409**	**453,491.9**
Department stores	270	1,973,726.6	302,933.7	—	119,586	304,949.9
General merchandise stores	1,875	600,487.2	80,019.4	859	16,741	43,401.7
General stores, more than one third food	5,392	557,884.2	103,856.3	4,436	13,367	36,803.9
Variety stores	1,694	494,202.4	79,077.1	603	34,715	68,336.4
Automotive	**36,262**	**6,943,448.1**	**748,458.6**	**31,438**	**155,350**	**661,959.4**
Motor vehicle dealers	3,935	4,337,821.7	565,438.3	1,457	76,842	378,473.7
Used car dealers	1,336	194,992.4	21,636.8	1,029	2,847	13,156.1
Accessories, tire and battery shops	1,362	175,085.2	30,592.9	814	5,186	22,928.1
Home and auto supply stores	526	148,902.1	27,729.8	280	5,105	18,855.5
Service stations	18,720	1,671,426.8	75,054.0	17,966	43,166	140,946.4
Garages	5,570	202,117.2	17,044.1	5,601	7,855	29,357.5
Paint and body shops	2,858	120,689.9	4,044.9	2,703	7,393	33,754.9
Other specialty repair shops	1,310	62,120.0	5,868.8	1,077	3,307	15,066.7
Car washes	452	23,146.3	357.1	339	3,227	7,985.1
Other automotive businesses	193	7,146.5	691.9	172	422	1,435.4
Apparel and Accessories	**19,816**	**1,625,415.4**[r]	**426,491.4**[r]	**13,068**	**67,207**	**197,954.1**[r]
Men's and boys' clothing stores	2,817	285,951.4	87,196.4	1,727	8,607	34,621.9
Men's and boys' furnishings stores	439	32,181.1	9,549.5	309	845	2,962.7
Women's and misses' ready-to-wear stores	4,180	386,946.2	79,061.4	2,464	17,440	47,386.7
Lingerie and hosiery stores	743	26,512.7	7,923.4	602	1,139	2,581.4
Millinery stores	559	10,023.1	1,598.4	510	527	1,238.4
Fur stores	698	55,269.1	19,003.6	451	2,579	9,071.9
Women's apparel and accessories stores	126	5,423.8	1,333.9	98	256	650.7
Children's and infants' wear stores	1,097	53,743.7	16,155.9	923	2,280	4,711.6
Family clothing and furnishings stores	2,690	398,000.6	95,994.1	1,703	18,755	49,018.6
Men's shoe stores	112	5,478.7	1,934.7	94	143	621.9
Women's shoe stores	267	27,875.7[r]	6,063.7[r]	101	841	3,662.7[r]
Children's and infants' shoe stores	73	4,178.5	1,235.8	39	161	542.0
Family shoe stores	2,870	214,437.7	69,717.3	1,333	8,579	26,221.8
Custom tailors	1,014	39,230.2	7,042.7	934	1,792	6,547.2
Second-hand clothing stores	398	8,681.9	1,036.1	258	535	1,089.9
Piece goods stores	1,610	64,036.0	19,719.5	1,437	2,390	5,952.0
Other apparel and accessories stores	123	7,445.0	1,925.0	85	338	1,072.7
Hardware and Home Furnishings	**15,921**	**1,480,774.2**	**322,742.1**	**11,729**	**43,829**	**174,116.4**
Hardware stores	3,786	357,408.8	102,226.3	2,887	11,108	37,848.2
Paint, glass and wallpaper stores	807	47,638.9	8,675.7	550	1,446	6,004.1
Furniture stores	2,208	370,883.5	74,068.7	1,168	9,245	40,659.5
Household appliance stores	1,145	116,487.5	22,013.6	693	4,027	16,848.2
Television sales and service shops	711	30,733.0	6,463.2	667	1,012	3,733.1

2.—Summary Statistics of Retail Trade, by Kind-of-Business Group and Selected Trades, 1966 Census—concluded

Kind of Business	Stores	Sales	Inventory at End of Year	Working Proprietors	Paid Employees	
					Last Week of November	Total Payroll for Year
	No.	$'000	$'000	No.	No.	$'000
Hardware and Home Furnishings—concluded						
Furniture, television, radio and appliance stores	1,154	252,464.2	51,886.9	525	6,161	26,252.
Television, radio and hi-fi stores	737	65,842.7	13,692.8	547	1,714	7,672.
Television and radio repair shops	2,154	41,953.9	7,024.0	2,061	1,733	6,700.
Household appliance repair shops	714	21,465.1	3,460.0	633	1,298	5,127.
Electrical supply stores	205	11,534.5	2,606.9	152	434	1,495.
China, glassware and kitchenware stores	116	6,479.6	2,144.5	96	305	877.
Floor coverings, curtains and drapery stores	952	125,684.2	19,433.2	577	4,252	17,461.
Picture and picture framing stores	97	2,581.1	525.2	91	146	437.
Antique stores	521	12,783.5	5,300.0	505	369	1,314.
Second-hand furniture stores	513	10,463.6	1,772.7	500	340	886.
Other home furnishings stores	101	6,370.1	1,448.4	77	239	798.
Other Retail Stores	**26,170**	**3,105,121.9**	**420,655.1**	**18,115**	**79,534**	**283,404.**
Drug stores without meals or lunches	4,745	615,023.6	117,432.4	2,754	24,342	85,493.
Drug stores with meals or lunches	160	33,199.1	5,758.8	66	1,582	5,076.
Patent and proprietary medicine stores	251	21,387.5	3,593.7	185	643	1,573.
Fuel oil dealers	1,664	391,564.4	12,083.6	1,204	7,112	32,247.
Fuel dealers, other than oil	533	83,651.2	7,930.1	217	2,256	10,224.
Government liquor stores	1,112	765,254.1	49,021.2	2	6,472	29,973.
Brewers' retail stores or agents	364	160,179.9	56.2	25	1,210	6,744.
Wine stores	51	5,577.9	253.4	—	214	882.
Jewellery stores	2,809	191,635.2	64,935.5	2,152	7,992	25,273.
Jewellery repair shops	609	6,834.6	1,503.3	611	218	674.
Sporting goods stores	1,132	86,082.4	23,973.7	863	2,326	8,397.
Boats, motors and accessories dealers	440	46,250.5	8,940.6	305	997	4,367.
Bicycle shops, (incl. repairs)	419	9,149.0	2,450.2	415	239	676.
Motorcycle dealers	179	21,082.7	4,344.9	137	462	1,883.
Tobacco stores and stands	2,145	124,465.9	11,731.9	1,775	3,239	6,881.
Book and stationery stores	1,080	81,623.1	20,219.1	732	3,448	9,347.
Newsdealers	204	10,350.9	1,074.0	149	333	713.
Florists	1,673	72,225.0	4,043.7	1,454	4,038	11,977.
Gift, novelty and souvenir stores	1,691	63,169.4	16,195.3	1,467	2,600	5,847.
Camera stores	331	35,772.6	7,470.3	199	1,060	4,089.
Piano and organ stores	128	16,420.0	3,967.9	69	490	2,234.
Music stores	427	28,425.8	7,602.2	336	1,016	2,995.
Opticians	379	19,109.0	1,807.2	134	877	4,712.
Luggage and leather goods stores	177	11,866.5	3,279.8	108	503	1,370.
Health appliance stores	170	7,039.5	640.2	118	287	1,347.
Monument dealers	204	9,591.7	1,646.9	165	399	1,825.
Toy and hobby shops	319	15,734.9	3,795.1	232	770	1,638.
Record bars	210	13,480.0	3,259.6	148	453	1,158.
Pet stores	212	4,822.1	935.0	210	174	363.
Religious goods stores	58	2,749.8	1,078.0	38	165	408.
Wool stores	250	5,022.8	1,861.0	236	258	478.
Other retail stores	2,044	146,380.8	27,770.3	1,609	3,359	12,524.
Totals, All Stores	**153,620**	**22,686,418.2**r	**2,817,037.0**r	**122,456**	**668,965**	**2,150,719.**

The establishment series, as noted earlier, is based upon record-keeping and the capa bility at the reporting unit to provide certain minimum types of information not normall available at the location level. Because it is based on the accounting entity rather than o the existence of a certain number of physical retailing locations, the establishment serie is related to other series within DBS and can be utilized as part of the system of nationa accounting. Table 3 provides information on sales of retail establishments by class c customer for kind-of-business groups and selected trades.

3.—Retail Sales by Kind-of-Business Group and Selected Trades, and Percentage Distribution of Sales by Class of Customer, 1966 Census

(Establishment series)

Kind of Business	Total Sales	Sales by Class of Customer		
		Household or Personal Users	Industrial and Commercial Users	Others for Re-sale
	$'000	p.c.	p.c.	p.c.
Food	**5,840,264.4**	**99.4**	**0.3**	**0.3**
Bakery products stores	34,222.9	97.9	0.2	1.9
Candy, nut and confectionery stores	26,681.7	99.4	0.1	0.5
Dairy products stores	42,831.5	97.9	0.5	1.6
Fruit and vegetable stores	46,599.2	98.5	0.5	1.0
Grocery, confectionery and sundries stores	328,576.7	99.6	0.3	0.1
Grocery stores, without fresh meat	582,855.8	99.8	0.1	0.1
Grocery stores, with fresh meat	4,453,119.1	99.5	0.3	0.2
Meat markets	270,520.4	96.8	1.9	1.3
Fish markets	7,947.0	96.9	1.5	1.6
Delicatessen stores	31,391.1	99.4	--	0.6
General Merchandise	**3,679,512.5**	**96.1**	**3.0**	**0.9**
Department stores	2,263,294.0	96.4	3.6	--
General merchandise stores	287,467.7	92.7	4.9	2.4
General stores	600,100.2	96.1	2.9	1.0
Variety stores	528,650.6	96.4	0.1	3.5
Automotive	**6,956,550.7**	**93.1**	**4.6**	**2.3**
Motor vehicle dealers	4,366,574.8	92.2	4.9	2.9
Used car dealers	194,899.4	97.3	0.7	2.0
Accessories, tire and battery stores	174,936.5	86.7	7.6	5.7
Home and auto supply stores	153,689.3	92.2	5.0	2.8
Service stations	1,651,655.8	95.3	4.3	0.4
Garages	200,853.0	95.5	3.8	0.7
Paint and body shops	121,016.6	93.4	4.6	2.0
Other specialty repair shops	62,915.0	92.0	4.4	3.6
Car washes	22,863.8	96.7	2.0	1.3
Apparel and Accessories	**1,656,013.6**	**99.3**	**0.3**	**0.4**
Men's and boys' clothing stores	295,121.5	99.5	0.3	0.2
Men's and boys' furnishings stores	43,199.4	99.6	0.1	0.3
Women's and misses' ready-to-wear stores	383,062.2	99.9	--	0.1
Lingerie and hosiery stores	26,337.1	99.9	0.1	--
Millinery stores	11,545.8	99.9	—	0.1
Fur stores	55,161.0	99.3	0.1	0.6
Children's and infants' wear stores	52,816.6	99.8	0.2	--
Family clothing and furnishings stores	398,404.8	98.8	0.4	0.8
Men's shoe stores	5,268.1	99.5	0.5	--
Women's shoe stores	27,932.2	99.9	--	0.1
Family shoe stores	230,619.9	99.4	0.1	0.5
Custom tailors	39,230.6	99.4	0.2	0.4
Piece goods stores	62,748.0	98.4	0.7	0.9
Hardware and Home Furnishings	**1,440,735.5**	**95.3**	**3.3**	**1.4**
Hardware stores	344,990.1	92.1	6.4	1.5
Paint, glass and wallpaper stores	44,265.6	88.8	8.2	3.0
Furniture stores	373,497.4	98.4	1.0	0.6
Household appliance stores	110,691.8	95.8	3.1	1.1
Television sales and service shops	30,894.1	97.7	1.5	0.8
Furniture, television, radio and appliance stores	230,160.6	97.4	1.4	1.2
Television, radio and hi-fi stores	66,387.2	96.6	1.9	1.5
Television and radio repair shops	41,511.8	97.4	1.5	1.1
Household appliance repair shops	21,217.8	85.4	2.7	11.9
Electrical supply stores	11,534.6	90.4	3.3	6.3
China, glassware and kitchenware stores	6,328.9	96.3	2.7	1.0
Floor coverings, curtains and drapery stores	126,341.8	91.9	6.7	1.4
Antique stores	12,798.4	96.1	0.6	3.3
Second-hand furniture stores	10,616.1	95.5	1.8	2.7
Other Retail Stores[1]	**3,299,426.7**	**89.0**	**2.1**	**8.9**
Drug stores without meals or lunches	645,868.8	98.7	0.9	0.4
Drug stores with meals or lunches	28,900.9	99.2	0.3	0.5
Patent and proprietary medicine stores	22,255.1	99.9	0.1	--
Fuel oil dealers	377,492.8	91.3	7.2	1.5
Fuel dealers, other than oil	76,393.4	80.3	15.4	4.3

[1] Includes alcoholic beverage stores, brewers' retail stores and wine stores.

3.—Retail Sales by Kind-of-Business Group and Selected Trades, and Percentage Distribution of Sales by Class of Customer, 1966 Census—concluded

Kind of Business	Total Sales	Sales by Class of Customer		
		Household or Personal Users	Industrial and Commercial Users	Others for Re-sale
	$'000	p.c.	p.c.	p.c.
Other Retail Stores—concluded				
Jewellery stores	194,774.8	98.8	1.0	0.2
Jewellery repair shops	6,820.5	99.4	0.1	0.5
Sporting goods stores	86,322.8	94.5	4.0	1.5
Boats, motors and accessories dealers	46,281.2	95.8	1.9	2.3
Bicycle shops (incl. repairs)	9,149.0	96.4	1.3	2.3
Motorcycle dealers	18,906.5	95.3	1.2	3.5
Tobacco stores and stands	128,497.5	99.7	0.1	0.2
Book and stationery stores	78,740.3	93.0	6.1	0.9
Newsdealers	10,310.0	99.7	--	--
Florists	71,850.1	95.3	2.8	1.9
Gift, novelty and souvenir stores	61,890.7	98.4	0.3	1.3
Camera stores	38,609.4	90.5	8.1	1.4
Piano and organ stores	15,567.6	91.8	7.8	0.4
Music stores	28,919.2	94.2	2.1	3.7
Opticians	20,610.9	99.1	0.7	0.2
Luggage and leather goods stores	11,410.2	98.3	0.8	0.9
Toy and hobby shops	15,937.8	98.6	0.5	0.9
Record bars	13,321.8	93.2	3.2	3.6
Totals, All Stores	**22,872,503.4**	**95.2**	**2.5**	**2.3**

Service Trades*

Changes within the service sector of the economy can best be measured and analysed by comparing the results obtained in each census of merchandising and services because, at present, intercensal surveys provide only partial coverage of this large and diversified field. Consumer expenditures on services—at least, those considered within the scope of the census—have increased rapidly in recent years. Examination of the 1961-66 rates of change within the following key economic areas shows that the service trades have developed at a faster rate than most other important indicators:—

Indicator	*Rate of Change 1961-66*
	p.c.
Gross national product	+ 57.2
Personal income	+ 55.4
Service trades (location series)	+ 53.9
Personal disposable income	+ 50.7
Personal consumer expenditure	+ 43.5
Per capita personal income	+ 41.6
Retail trade (location series)	+ 41.1
Per capita personal disposable income	+ 37.3
Per capita personal consumer expenditure	+ 30.8

At their present rate of growth, the receipts of service trades covered by the census will have more than doubled in the period 1961-71. The areas showing the greatest potential for growth during this decade (Table 4) include services of business management, amusement and recreation services, and the hotel and restaurant group.

* *1966 Census of Canada*, Vol. VIII, "Service Trades" (location series, Catalogue Nos. 97-642 to 97-645; establishment series, Catalogue No. 97-647). For explanation of the terms "location" and "establishment", see footnote † p. 997.

.—Number and Receipts of Service Trade Locations, by Kind of Business and by Province, 1961 and 1966 Censuses

(Location series)

Kind of Business	Locations			Receipts		
	1961	1966	Percentage Change 1961–66	1961	1966	Percentage Change 1961–66
	No.	No.		$'000	$'000	
musement and Recreation Group	**5,835**	**7,422**	**+ 27.2**	**253,290.5**	**441,905.5**	**+ 74.5**
Motion picture theatres	1,340	1,228	− 8.4	74,231.4	101,258.9	+ 36.4
Halls used for motion picture exhibition	253	54	− 78.7	1,858.1	634.5	− 65.9
Motion picture drive-in theatres	238	253	+ 6.3	9,558.1	17,720.9	+ 85.4
Legitimate theatres, auditoriums, etc	9	55	+ 511.1	718.4	2,572.7	+ 258.1
Theatrical producers, road companies, etc	7	17	+ 142.9	1,243.3	3,155.9	+ 153.8
Bands, orchestras and entertainers	52	33	− 36.5	878.8	640.8	− 27.1
Film exchanges	117	154	+ 31.6	34,769.6	57,164.0	+ 64.4
Theatrical booking agencies	18	18	—	986.9	716.8	− 27.4
Motion picture production	53	116	+ 118.9	6,868.8	15,172.6	+ 120.9
Motion picture laboratories	13	18	+ 38.5	3,808.6	5,779.4	+ 51.7
Other theatrical services	14	27	+ 92.9	592.9	1,553.9	+ 162.1
Billiard parlours	1,317	1,492	+ 13.3	13,425.1	19,932.6	+ 48.5
Bowling alleys	883	1,027	+ 16.3	33,216.7	32,532.1	− 2.1
Bowling and billiards	137	205	+ 49.6	4,789.6	8,303.5	+ 73.4
Dancehalls, studios and schools	250	394	+ 57.6	3,757.5	6,524.4	+ 73.6
Athletic clubs, arenas, stadiums, etc	68	79	+ 16.2	11,396.2	16,017.0	+ 40.5
Bathing beaches and swimming pools	45	89	+ 97.8	461.2	1,512.8	+ 228.0
Boat and canoe rentals	149	138	− 7.4	1,375.3	1,389.1	+ 1.0
Golf courses	199	578	+ 190.5	6,951.9	39,001.0	+ 461.0
Race track operation	28	54	+ 92.9	24,272.4	56,440.5	+ 132.5
Riding academies	120	197	+ 64.2	840.7	1,917.4	+ 128.1
Skating rinks, ice	140	56	− 60.0	1,491.9	1,459.2	− 2.2
Skating rinks, roller	14	24	+ 71.4	259.8	868.0	+ 224.1
Amusement parks	28	47	+ 67.9	3,484.7	3,478.6	− 0.2
Coin-operated amusement device services	42	88	+ 109.5	2,190.0	4,150.2	+ 89.5
Coin-operated machine rental and repair	8	25	+ 212.5	941.2	2,173.7	+ 130.9
Miscellaneous A and R services	206	956	..	8,921.4	39,835.0	..
usiness Services Group	**4,024**	**5,072**	**+ 26.0**	**272,684.0**	**492,387.6**	**+ 80.6**
Advertising agencies	222	264	+ 18.9	46,827.3	69,942.7	+ 49.4
Outdoor display and billboard advertising	87	56	− 35.6	12,347.6	14,521.9	+ 17.6
Sign painting shops	365	464	+ 27.1	6,972.0	10,616.9	+ 52.3
Window display services	12	19	+ 58.3	1,013.2	800.0	− 21.0
Other advertising services	318	351	+ 10.4	26,998.8	38,683.8	+ 43.3
Chartered and certified accountants	1,099	1,495	+ 36.0	75,603.9	137,290.9	+ 86.5
Other accounting and bookkeeping services	568	461	− 18.8	11,552.6	9,225.0	− 20.1
Addressing, duplicating, mailing and typing services	238	326	+ 37.0	16,348.3	49,960.2	+ 205.6
Credit agencies	84	142	+ 69.0	9,109.0	15,951.9	+ 75.1
Personnel suppliers (employment agencies)	52	248	+ 376.9	2,644.0	35,137.7	+1,229.0
Other business services, *n.e.s.*	979	1,246	+ 27.2	65,267.3	110,256.6	+ 68.9
rsonal Services Group	**32,123**	**35,655**	**+ 11.0**	**406,974.2**	**596,480.7**	**+ 46.6**
Barber shops	9,256	10,217	+ 10.4	52,755.5	72,748.7	+ 37.9
Barber and beauty salon combined	327	490	+ 49.8	4,381.8	6,706.9	+ 53.1
Beauty salons	10,221	12,505	+ 22.3	87,016.6	149,026.2	+ 71.3
Dry cleaning and dyeing (with laundry)	528	985	+ 86.6	43,508.4	94,400.8	+ 117.0
Dry cleaning and dyeing plants	1,238	1,141	− 7.8	48,078.0	54,861.2	+ 14.1
Pickup offices of dry cleaners	993	986	− 0.7	11,087.0	13,333.1	+ 20.3
Distributors or agents of dry cleaners	959	847	− 11.7	10,806.0	12,418.5	+ 14.9

4.—Number and Receipts of Service Trade Locations, by Kind of Business and by Province, 1961 and 1966 Censuses—continued

Kind of Business	Locations			Receipts		
	1961	1966	Percentage Change 1961–66	1961	1966	Percentage Change 1961–66
	No.	No.		$'000	$'000	
Personal Services Group—concluded						
Rug cleaning and repairing plants	90	114	+ 26.7	3,717.8	5,692.4	+ 53.1
Self-service dry cleaners	5	237	--	47.6	4,076.9	--
Hand laundries	615	428	− 30.4	2,610.0	3,125.1	+ 19.7
Power laundries (with cleaning and dyeing)	147	142	− 3.4	27,691.7	35,123.8	+ 26.8
Power laundries	180	142	− 21.1	16,889.6	13,117.6	− 22.3
Pickup offices of power laundries	190	137	− 27.9	6,039.2	5,350.5	− 11.4
Linen supply service (with laundry)	35	46	+ 31.4	21,494.4	35,448.7	+ 64.9
Linen supply service	46	34	− 26.1	7,849.7	4,950.1	− 36.9
Diaper service	16	20	+ 25.0	1,513.8	2,615.7	+ 72.8
Self-service laundries	1,138	1,766	+ 55.2	11,145.6	19,673.5	+ 76.5
Shoe repair shops	3,724	3,037	− 18.4	23,251.8	22,717.5	− 2.3
Shoeshine parlours	170	148	− 12.9	712.0	664.9	− 6.6
Fur cleaning, repair and storage	118	61	− 48.3	2,112.7	1,710.5	− 19.0
Hat cleaning shops	23	16	− 30.4	202.7	166.1	− 18.1
Valet service, pressing and repair shops	896	1,054	+ 17.6	7,106.7	11,483.7	+ 61.6
Dressmakers	690	524	− 24.1	2,754.4	3,755.5	+ 36.3
Cemeteries	80	138	+ 72.5	5,996.4	8,862.5	+ 47.8
Miscellaneous personal services	438	440	+ 0.5	8,204.8	14,450.3	+ 76.1
Repair Services Group	**3,446**	**2,828**	**− 17.9**	**64,760.2**	**65,572.2**	**+ 1.3**
Welding shops	[1]	1,069	..	[1]	26,353.5	..
Electric motor repair shops	253	302	+ 19.4	12,132.4	19,798.4	+ 63.2
Locksmiths, gunsmiths, tool and cutlery repairs	390	373	− 4.4	4,970.5	6,430.5	+ 29.4
Miscellaneous repair shops	2,803	1,084	− 48.0	47,657.3	12,989.8	− 72.7
Hotel and Restaurant Group	**34,626**	**37,508**	**+ 8.3**	**1,660,787.8**	**2,397,258.4**	**+ 44.3**
Full-year hotels, licensed	3,628	3,997	+ 10.2	519,909.3	765,654.1	+ 47.3
Full-year hotels, non-licensed	705	311	− 55.9	21,547.8	11,309.0	− 47.5
Seasonal hotels, licensed	192	169	− 12.0	14,585.9	14,980.0	+ 2.7
Seasonal hotels, non-licensed	604	233	− 61.4	11,849.4	5,603.3	− 52.7
Motels	2,693	3,527	+ 31.0	58,700.0	126,896.7	+ 116.2
Tourist courts, cabins, etc.	2,795	1,908	− 31.7	15,646.2	25,357.2	+ 62.1
Tourist camping grounds	335	608	+ 81.5	3,110.6	5,860.1	+ 88.4
Hunting and fishing camps	1,243	685	− 44.9	12,508.8	11,738.9	− 6.2
Recreation vacation camps	62	170	+ 174.2	2,926.6	4,930.6	+ 68.5
Eating places	13,199	16,497	+ 25.0	518,296.8	700,995.5	+ 35.2
Eating places, licensed	478	1,595	+ 236.7	80,580.0	251,396.7	+ 212.0
Eating places with other merchandise	5,599	2,878	− 48.6	190,148.7	112,534.9	− 40.8
Refreshment booths and stands	760	786	+ 3.4	14,143.6	15,620.9	+ 10.4
Fish and chip shops	449	—	...	7,374.4	—	...
Take-out food shops	—	874	...	—	32,277.9	...
Cocktail lounges, bars, night clubs	200	308	+ 54.0	23,072.9	34,455.3	+ 49.3
Taverns, beverage rooms, public houses	1,316	1,698	+ 29.0	96,285.6	127,615.1	+ 32.5
Caterers	368	495	+ 34.5	70,101.2	78,936.5	+ 12.6
Industrial restaurants	—	769	...	—	71,095.7	...
Miscellaneous Services Group	**4,711**	**5,306**	**+ 12.6**	**321,353.1**	**593,397.0**	**+ 84.7**
Funeral directors	1,533	1,706	+ 11.3	69,779.8	85,427.7	+ 22.4
Commercial photographers	172	295	+ 71.5	7,804.1	14,875.8	+ 90.6
Portrait photographers	998	1,050	+ 5.2	18,426.0	24,352.2	+ 32.2
Developing, printing and enlarging	162	154	− 4.9	21,233.4	33,049.8	+ 55.7
Auto and truck rentals (no driver)	305	287	− 5.9	40,069.0	71,528.8	+ 78.5

[1] Included with "Miscellaneous repair shops".

—Number and Receipts of Service Trade Locations, by Kind of Business and by Province, 1961 and 1966 Censuses—concluded

Kind of Business and Province	Locations			Receipts		
	1961	1966	Percentage Change 1961–66	1961	1966	Percentage Change 1961–66
	No.	No.		$'000	$'000	
scellaneous Services Group—concluded						
Other equipment rental	[1]	544	..	[1]	260,528.4	..
Collection agencies	141	186	+ 31.9	5,084.1	8,996.9	+ 77.0
Driving schools	138	190	+ 37.7	1,988.2	3,491.2	+ 75.6
Investigation services	42	45	+ 7.1	5,579.8	3,088.0	− 44.7
Disinfecting and exterminating services	48	65	+ 35.4	2,420.0	4,345.4	+ 79.6
Window-cleaning services	70	61	− 12.9	2,772.2	3,106.8	+ 12.1
Other building services	267	260	− 2.6	25,676.3	40,517.3	+ 57.8
Other miscellaneous services	835	463	..	120,520.2	40,088.7	..
Totals, All Locations	**84,765**	**93,791**	**+ 10.6**	**2,979,849.8**	**4,587,001.4**	**+ 53.9**
Province						
wfoundland	834	1,167	+ 39.9	31,116.4	47,155.0	+ 51.5
nce Edward Island	360	362	+ 0.6	6,442.3	9,554.7	+ 48.3
va Scotia	2,538	2,678	+ 5.5	64,109.0	92,186.5	+ 43.8
w Brunswick	2,066	2,236	+ 8.2	42,465.9	77,433.6	+ 82.3
ebec	23,803	27,232	+ 14.4	821,379.3	1,252,882.1	+ 52.5
tario	32,014	34,518	+ 7.8	1,175,641.8	1,839,281.4	+ 56.4
nitoba	3,853	4,058	+ 5.3	153,921.0	216,718.3	+ 40.8
katchewan	4,263	4,366	+ 2.4	123,925.0	165,003.1	+ 33.1
berta	5,921	6,751	+ 14.0	238,268.2	351,374.3	+ 47.5
tish Columbia	8,957	10,222	+ 14.1	314,417.2	522,931.9	+ 66.3
kon and Northwest Territories	156	201	+ 28.8	8,163.7	12,480.5	+ 52.9

[1] Included with "Other miscellaneous services".

Subsection 2.—Intercensal Surveys of Retail, Wholesale and Service Trades

tail Trade

The trend of retail trade is one of the most accurate barometers of the economic health d well-being of the nation. In 1969, retailers accounted for 54.2 p.c. of personal dis- sable income available to Canadians and 58.8 p.c. of total personal expenditure on sumer goods and services. The value of retail sales, estimated from intercensal sample veys (and revised every five years to a new census base*), increased by 20.4 p.c. during period 1966-69.

The current retail trade series shown in Table 5 reflects the many definitional changes opted for use in the 1966 Census. The new classification, "grocery, confectionery and dries stores", is included in the "grocery and combination stores" series; on the other nd, "home and auto supply stores" and "accessories, tire and battery stores" remain part the "all other stores" category. In addition, as described earlier, the department store inition was changed and this affected the variety store and general store series. Also, a v kind of business—general merchandise stores—was taken out of the miscellaneous res grouping and established as a separate series, commencing in 1966.

* Details of intercensal revisions may be found in *Retail Trade, Intercensal Revisions, 1961-66* (Catalogue No. 17—Part 1) and in *Retail Trade, Post-censal Revisions, 1966-69* (Catalogue No. 63-517—Part 2).

5.—Retail Trade, by Kind of Business and by Province, 1966-69

Kind of Business and Province	1966	1967	1968	1969[1]	Percentage Change 1966-69
	$'000,000	$'000,000	$'000,000	$'000,000	
Kind of Business					
Grocery and combination stores	5,351.6	5,685.5	5,985.6	6,422.8	+20.0
All other food stores	553.7	579.2	580.7	626.8	+13.2
Department stores	1,973.7	2,157.8	2,444.8	2,723.2	+38.0
General merchandise stores	644.7	677.8	727.9	807.7	+25.4
General stores	557.9	573.1	572.0	601.1	+ 7.7
Variety stores	494.2	531.9	513.2	541.8	+ 9.6
Motor vehicle dealers	4,337.8	4,433.2	4,714.1	4,808.3	+10.8
Service stations and garages	1,873.5	2,003.7	2,179.8	2,300.4	+22.8
Men's clothing stores	357.4	371.7	398.4	421.4	+17.9
Women's clothing stores	435.1	484.7	501.8	536.6	+23.3
Family clothing stores	337.5	370.9	381.4	389.0	+15.3
Shoe stores	252.0	285.2	306.5	313.7	+24.5
Hardware stores	355.8	366.5	392.4	402.2	+13.0
Furniture, TV and appliance stores	739.8	784.2	816.1	863.3	+16.7
Fuel dealers	475.2	461.1	471.4	485.5	+ 2.2
Drug stores	649.8	702.6	736.6	784.1	+20.7
Jewellery stores	191.6	208.2	213.7	222.6	+16.2
All other stores	3,104.9	3,477.5	3,774.5	4,074.1	+31.2
Canada	**22,686.4**	**24,154.8**	**25,710.8**	**27,324.6**	**+20.4**
Province					
Newfoundland	405.6	438.4	464.2	470.4	+16.0
Prince Edward Island	107.6	113.0	121.7	125.7	+16.8
Nova Scotia	753.0	792.7	862.3	893.3	+18.6
New Brunswick	594.8	635.0	687.2	704.3	+18.4
Quebec	5,882.1	6,379.2	6,564.9	6,937.8	+17.9
Ontario	8,625.4	9,091.0	9,884.7	10,639.2	+23.3
Manitoba	1,006.5	1,073.3	1,118.0	1,159.2	+15.2
Saskatchewan	1,046.6	1,081.5	1,081.6	1,054.7	+ 0.8
Alberta	1,758.1	1,902.8	2,066.9	2,234.7	+27.1
British Columbia[2]	2,506.6	2,648.0	2,859.3	3,105.3	+23.9

[1] Subject to revision. [2] Includes the Yukon and Northwest Territories.

Chain* and Independent Stores.—Within the framework of retail trade, chains and independent retailers compete to achieve or retain a viable share of the total market. In some kinds of business, such as motor vehicle dealers, service stations and garages, food stores other than grocery and combination stores, and men's clothing stores, independent merchants have maintained a dominant position; in others, such as department stores, variety stores and general merchandise stores, chains account for the largest proportion of sales. In recent years, changes in market share have been most pronounced among women's clothing stores, grocery and combination stores, hardware stores, general merchandise stores and family clothing stores. The constantly shifting balance between chain and independent stores is shown in Tables 6 and 7.

* A retail chain is defined by DBS as "an organization operating four or more retail stores in the same kind of business under the same legal ownership". A concession located in a department store is *not* considered to be a store location for the purpose of this definition.

6.—Sales of Chain and Independent Stores, by Kind of Business, 1966 and 1969

Kind of Business	Chain Stores			Independent Stores		
	1966	1969	Percentage Change 1966–69	1966	1969	Percentage Change 1966–69
	$'000,000	$'000,000		$'000,000	$'000,000	
ocery and combination stores	2,400.7	3,122.6	+30.1	2,950.9	3,300.3	+11.8
l other food stores	48.4	63.3	+30.8	505.3	563.5	+11.5
partment stores	1,973.7	2,723.2	+38.0	—	—	—
neral merchandise stores	481.9	621.5	+29.0	162.8	186.3	+14.4
neral stores	90.1	85.0	− 5.7	467.8	516.1	+10.3
riety stores	428.5	467.9	+ 9.2	65.7	73.8	+12.3
tor vehicle dealers	67.1	68.7	+ 2.4	4,270.7	4,739.6	+11.0
rvice stations and garages	63.5	118.6	+86.8	1,810.0	2,181.8	+20.5
n's clothing stores	47.1	53.6	+13.8	310.3	367.7	+18.5
men's clothing stores	115.3	171.2	+48.5	319.8	365.4	+14.3
mily clothing stores	73.9	94.4	+27.7	263.7	294.6	+11.7
oe stores	113.3	138.0	+21.8	138.7	175.7	+26.7
rdware stores	55.3	73.2	+32.4	300.5	328.9	+ 9.5
rniture, TV and appliance stores	141.9	149.1	+ 5.1	597.9	714.2	+19.5
el dealers	76.2	82.1	+ 7.7	399.0	403.4	+ 1.1
ug stores	87.2	120.4	+38.1	562.6	663.7	+18.0
vellery stores	64.5	74.9	+16.1	127.1	147.7	+16.2
other stores	1,161.0	1,578.2	+35.9	1,943.9	2,495.9	+28.4
Totals, All Stores	**7,489.8**	**9,805.9**	**+30.9**	**15,196.6**	**17,518.7**	**+15.3**

7.—Changes in Market Share of Chain and Independent Stores, by Kind of Business, 1966 and 1969

Kind of Business	Chain Stores			Independent Stores		
	1966	1969	Percentage Point Change 1966–69	1966	1969	Percentage Point Change 1966–69
	p.c.	p.c.		p.c.	p.c.	
ocery and combination stores	44.9	48.6	+ 3.7	55.1	51.4	− 3.7
other food stores	8.7	10.1	+ 1.4	91.3	89.9	− 1.4
partment stores	100.0	100.0	—	—	—	—
neral merchandise stores	74.7	76.9	+ 2.2	25.3	23.1	− 2.2
neral stores	16.1	14.1	− 2.0	83.9	85.9	+ 2.0
riety stores	86.7	86.4	− 0.3	13.3	13.6	+ 0.3
tor vehicle dealers	1.5	1.4	− 0.1	98.5	98.6	+ 0.1
vice stations and garages	3.4	5.2	+ 1.8	96.6	94.8	− 1.8
n's clothing stores	13.2	12.7	− 0.5	86.8	87.3	+ 0.5
men's clothing stores	26.5	31.9	+ 5.4	73.5	68.1	− 5.4
mily clothing stores	21.9	24.3	+ 2.4	78.1	75.7	− 2.4
oe stores	45.0	44.0	− 1.0	55.0	56.0	+ 1.0
rdware stores	15.5	18.2	+ 2.7	84.5	81.8	− 2.7
niture, TV and appliance stores	19.2	17.3	− 1.9	80.8	82.7	+ 1.9
el dealers	16.0	16.9	+ 0.9	84.0	83.1	− 0.9
ug stores	13.4	15.4	+ 2.0	86.6	84.6	− 2.0
vellery stores	33.7	33.6	− 0.1	66.3	66.4	+ 0.1
other stores	37.4	38.7	+ 1.3	62.6	61.3	− 1.3
Totals, All Stores	**33.0**	**35.9**	**+ 2.9**	**67.0**	**64.1**	**− 2.9**

Department Stores.—In 1969, department stores accounted for a higher proportion total sales than most other kinds of retail businesses—exceeded only by grocery and mbination stores and motor vehicle dealers. Their sales of $2,723,200,000 represented rly 10 p.c. of *total* retail trade and 13.2 p.c. of the business done by competing firms (all des other than motor vehicle dealers, fuel dealers and parts of the "all other stores" ssification). Department store sales in 1969 were 38.0 p.c. higher than in 1966, the

largest increase among the 18 specified kinds of business (see Table 5). However, growt among the various departments within department stores has not been consistent, a Table 8 shows.

8.—Department Store Sales by Departments, 1966 and 1969

Department	Sales[1]		Percentage Change 1966–69
	1966	1969	
	$'000	$'000	
Women's, Misses' and Children's Clothing—			
Women's and misses' dresses, housedresses, aprons and uniforms	62,000	78,700	+26.9
Women's and misses' coats and suits	48,100	58,700	+22.0
Women's and misses' sportswear	76,200	113,000	+48.3
Furs	13,400	15,300	+14.2
Infants' and children's wear and nursery equipment	55,500	77,900	+40.4
Girls' and teenage girls' wear	33,100	45,500	+37.5
Lingerie and women's sleepwear	42,800	51,400	+20.1
Intimate apparel	33,200	39,400	+18.7
Millinery	8,500	12,400	+45.9
Women's and girls' hosiery	30,100	53,600	+78.1
Women's and girls' gloves, mitts and accessories	35,000	47,300	+35.1
Women's, misses' and children's footwear	63,400	85,100	+34.2
Totals, Women's, Misses' and Children's Clothing	501,300	678,300	+35.3
Men's and Boys' Clothing—			
Men's clothing	71,500	118,100	+65.2
Men's furnishings	102,200	148,500	+45.3
Boys' clothing and furnishings	46,400	57,500	+23.9
Men's and boys' footwear	30,100	52,500	+74.4
Totals, Men's and Boys' Clothing	250,200	376,600	+50.5
Food and kindred products	101,200	120,000	+18.6
Toiletries, cosmetics and drugs	88,800	141,700	+59.6
Photographic equipment and supplies	27,700	44,800	+61.7
Piece goods	34,600	41,600	+20.2
Linens and domestics	58,700	70,400	+19.9
Smallwares and notions	21,900	34,800	+58.9
China and glassware	30,800	44,900	+45.8
Floor coverings	47,600	64,900	+36.3
Draperies, curtains and furniture covers	36,200	49,500	+36.7
Lamps, pictures, mirrors and all other home furnishings	17,900	27,500	+53.6
Furniture	110,600	133,700	+20.9
Major appliances	97,200	122,600	+26.1
Television, radio and music	80,100	113,900	+42.2
Housewares and small electrical appliances	64,400	89,300	+38.7
Hardware, paints, wallpaper, etc	51,400	73,400	+42.8
Plumbing, heating and building materials	17,300	20,900	+20.8
Jewellery	36,400	51,200	+40.7
Toys and games	41,800	62,600	+49.8
Sporting goods and luggage	54,400	75,300	+38.4
Stationery, books and magazines	50,100	69,200	+38.1
Gasoline, oil, auto accessories, repairs and supplies	37,400	50,900	+36.1
Receipts from meals and lunches	41,900	60,200	+43.7
Receipts from repairs and services All other departments	73,826	105,013	+42.2
Totals, All Departments	**1,973,726**	**2,723,213**	**+38.0**

[1] Based on extrapolations of original published data.

Voluntary Group Stores.—In order to stem the continuing encroachment of chain and department stores on their share of the market, independent retailers have turne increasingly in recent years to affiliation with a voluntary group organization. Throug such group affiliation, independent businessmen were afforded the opportunity to enjo many, if not all, of the benefits accruing to chain store firms—mass purchasing powe centralized buying, lower per-unit advertising costs and a number of important managemen services. As sponsors and/or suppliers of many voluntary groups, wholesalers also bene fited, particularly through the streamlining of their selling and order-filling systems.

The effects of voluntary group participation on the sales of retail store owners durin the 1967-68 period are shown in Table 9. For a number of reasons, affiliated retailer

net with widely varying degrees of success (as measured by sales comparisons with non-affiliated independent and chain store organizations) in the course of these years. Although independent variety stores in voluntary groups registered a decline of 3.3 p.c. in sales, the over-all experience of affiliated stores—both chain and independent—was far better than the results recorded by their non-affiliated competitors. In three of the four specified trades, non-affiliated independent stores showed the largest drop in sales and, in two of the four trades, affiliated independent stores showed the largest rise. The most dramatic changes occurred in the affiliated chain store sector, where sales increased at a faster rate than in any previous period—particularly in the drug and hardware kinds of business.

9.—Retail Sales in Affiliated and Non-affiliated Stores, 1967 and 1968

Kind of Business and Kind of Store	Sales		Percentage Change 1967–68
	1967	1968	
	$'000	$'000	
Grocery and Combination Stores	**5,685,513**	**5,985,589**	**+ 5.3**
Corporate chain stores	2,610,726	2,805,616	+ 7.5
Affiliated	*331,545*	*365,916*	*+ 10.4*
Non-affiliated	*2,279,181*	*2,439,700*	*+ 7.0*
Independent stores	3,074,787	3,179,973	+ 3.4
Affiliated	*1,579,197*	*1,801,737*	*+ 14.1*
Non-affiliated	*1,495,590*	*1,378,236*	*− 7.8*
Drug Stores	**702,645**	**736,552**	**+ 4.8**
Corporate chain stores	96,382	105,985	+ 10.0
Affiliated	*8,082*	*12,712*	*+312.5*
Non-affiliated	*93,300*	*93,273*	[1]
Independent stores	606,263	630,567	+ 4.0
Affiliated	*349,535*	*419,315*	*+ 20.0*
Non-affiliated	*256,728*	*211,252*	*− 17.7*
Hardware Stores	**366,460**	**392,408**	**+ 7.1**
Corporate chain stores	63,457	69,983	+ 10.3
Affiliated	*9,597*	*11,812*	*+ 23.1*
Non-affiliated	*53,860*	*58,171*	*+ 8.0*
Independent stores	303,003	322,425	+ 6.4
Affiliated	*192,379*	*241,279*	*+ 25.4*
Non-affiliated	*110,624*	*81,146*	*− 26.6*
Variety Stores	**531,868**	**513,168**	**− 3.5**
Corporate chain stores	464,861	440,220	− 5.3
Affiliated	*44,316*	*46,102*	*+ 4.0*
Non-affiliated	*420,545*	*394,118*	*− 6.3*
Independent stores	67,007	72,948	+ 8.9
Affiliated	*44,974*	*43,496*	*− 3.3*
Non-affiliated	*22,033*	*29,452*	*+ 33.7*
Totals, Specified Trades	**7,286,486**	**7,627,717**	**+ 4.7**
Corporate chain stores	3,235,426	3,421,804	+ 5.8
Affiliated	*388,540*	*436,542*	*+ 12.4*
Non-affiliated	*2,846,886*	*2,985,262*	*+ 4.9*
Independent stores	4,051,060	4,205,913	+ 3.8
Affiliated	*2,166,085*	*2,505,827*	*+ 15.7*
Non-affiliated	*1,884,975*	*1,700,086*	*− 9.8*

[1] Less than 0.05 p.c.

New Motor Vehicle Sales.—The largest homogeneous group of commodities sold within the confines of retail outlets is embodied in the classification "new motor vehicles". In the only current* survey of retail trade carried on at the commodity level (all others are based on "kind of business"), new motor vehicles are taken to include private passenger cars and taxis, trucks, buses, and other commercial vehicles sold at retail. As shown in Table **10**, sales of new motor vehicles in 1969 reached a new high of $3,322,879,000, based on the actual cost to purchasers (prior to 1967, the data were based on manufacturers' suggested list prices).

* DBS also produces—on an occasional basis (at present, once every five years)—a comprehensive report on *all* commodities sold in retail outlets. The most recent publication, *Retail Commodity Sales, 1968* (Catalogue No. 63-18), was released in February 1971.

10.—Retail Sales of New Motor Vehicles, 1960-69

Year	Passenger Cars		Trucks and Buses		Totals	
	No.	$	No.	$	No.	$
1960	447,771	1,289,073,000	75,417	285,754,000	523,188	1,574,827,000
1961	437,319	1,290,026,000	74,160	261,382,000	511,479	1,551,408,000
1962	502,565	1,482,407,000	82,645	300,509,000	585,210	1,782,916,000
1963	557,787	1,716,121,000	97,202	345,918,000	654,989	2,062,039,000
1964	616,759	1,936,258,000	109,120	401,544,000	725,879	2,337,802,000
1965	708,716	2,267,314,000	122,279	472,015,000	830,995	2,739,329,000
1966	694,820	2,274,083,000	132,611	550,508,000	827,431	2,824,591,000
1967	679,435	2,210,309,000	135,872	588,057,000	815,307	2,798,366,000
1968	741,915	2,481,141,000	147,538	634,648,000	889,453	3,115,789,000
1969	760,803	2,603,835,000	156,702	719,044,000	917,505	3,322,879,000

In recent years, the sales of overseas-manufactured vehicles—both passenger cars and trucks—have been increasing at a faster rate than those of Canadian and United States manufacture. In addition, the share of the new motor vehicle market held by overseas manufacturers has been rising apace; 1969 marked the third consecutive year of growth in the market share of new overseas vehicles. Table 11 shows new motor vehicle sales, by type of vehicle and by source of origin, for 1968 and 1969. It will be noted that one out of every seven new vehicles sold during 1969 was an overseas-built model, and that nearly one tenth of Canadian sales dollars went toward the purchase of such models.

11.—Retail Sales of New Motor Vehicles, by Type and Source, 1968 and 1969

Type of Vehicle and Source	Units			Retail Value		
	1968	1969	Percentage Change 1968-69	1968	1969	Percentage Change 1968-69
	No.	No.		$'000	$'000	
Passenger Cars	**741,915**	**760,803**	**+ 2.5**	**2,481,141**	**2,603,835**	**+ 4.9**
Canadian and U.S. manufacture	637,393	638,270	+ 0.1	2,238,712	2,308,109	+ 3.1
Overseas manufacture	104,522	122,533	+17.2	242,429	295,726	+22.0
Trucks and Buses	**147,538**	**156,702**	**+ 6.2**	**634,648**	**719,044**	**+13.3**
Canadian and U.S. manufacture	142,241	149,597	+ 5.2	620,184	69 ,536	+12.8
Overseas manufacture	5,297	7,105	+34.1	14,464	19,508	+34.9
Totals, All Vehicles	**889,453**	**917,505**	**+ 3.2**	**3,115,789**	**3,322,879**	**+ 6.6**
Canadian and U.S. manufacture	779,634	787,867	+ 1.1	2,858,896	3,007,645	+ 5.2
Overseas manufacture	109,819	129,638	+18.0	256,893	315,234	+23.7

Direct Selling.—Consumer goods, in addition to being sold in retail stores, often reach the household user through other more direct channels of distribution—commonly described as "direct selling". These channels are characterized by the fact that the commodities handled bypass the retail outlet completely in moving from manufacturer to distributor to household consumer. The DBS periodically carries out surveys of two distinct forms of direct selling: merchandise sales of vending machine operators, and of manufacturers* and distributors specializing in direct-sales methods.

Vending Machine Operators.—This survey is designed to measure the value of sales made through automatic vending machines owned or operated by vending machine firms, including soft drink bottlers engaged in vending activities on a regular year-round basis. In 1969, such sales reached a new high of $142,909,600, 12.5 p.c. above the 1968 total of $127.058,600. Although exact information on the number of vending machines and ancillary equipment used during 1969 is not available, the sample survey of that year indicated a possible total of 97,500 vending machines in operation—1,633 more than in 1968. It may be of some interest to note that there were 981 microwave and infra-red ovens, as

* See Manufactures Chapter, Sect. 2, pp. 794-799.

ell as 1,843 coin and bill changers, in use during 1968; if these numbers remained constant tween 1968 and 1969, the total of all machines in 1969 would have exceeded, for the first ne, the 100,000 mark.

12.—Vending Machine Operators, 1960-69

Year	Firms	Machines	Sales
	No.	No.	$
60	521	47,770	38,710,800
61	579	65,028	44,959,700
62	600	73,397	57,799,200
63	673	78,477	67,580,000
64	651	75,392	78,561,800
65	764	85,091	89,815,400
66	769	85,880[1]	107,539,600
67	790	93,441[1]	119,650,900
68	791	98,691[1]	127,058,600
69	[2]	[2]	142,909,600

[1] Includes microwave and infra-red ovens and coin and bill changers. [2] Not available; see text above *re* nple survey for 1969.

Although vending machines can be used to distribute many types of commodities, the gest proportion of sales has been accounted for consistently by three main lines: tobacco oducts; hot drinks; and cold drinks vended in bottles, cans, cartons and disposable cups. 1969, sales in these three product areas amounted to $114,049,200, an increase of 10.6 p.c. er the 1968 total. However, the over-all importance of tobacco products, hot drinks d cold drinks is declining. In 1960, these commodities accounted for 87.4 p.c. of all erchandise sold in vending machines; by 1969, this proportion had fallen to 79.8 p.c. mong commodities sold in vending machines, canned hot foods and canned soups, fresh ods and pastries showed the largest increases in market share during 1968-69.

13.—Value and Percentage Distribution of Sales by Vending Machine Operators, by Product, 1968 and 1969

Product	1968		1969	
	Sales	Percentage of Total	Sales	Percentage of Total
	$		$	
bacco products	63,030,144	49.6	68,236,300	47.8
cream	329,868	0.3	290,100	0.2
lk and milk products	3,099,613	2.4	3,437,500	2.4
ld Drinks—				
Vended in bottles, cans or cartons	9,398,393	7.4	10,351,400	7.2
Vended in disposable cups	12,885,831	10.1	14,323,900	10.0
t drinks (coffee, tea, hot chocolate and cup-vended soup)	17,813,568	14.0	21,137,600	14.8
lk (unwrapped) confectionery	1,482,788	1.2	1,522,400	1.1
ckaged confectionery	4,942,058	3.9	5,874.100	4.1
stries	6,040,045	4.8	7,258,900	5.1
nned hot foods and canned soup	1,440,334	1.1	1,827,200	1.3
esh foods (sandwiches, salads, casseroles, hot dogs, etc.)	6,357,623	5.0	8,472,100	5.9
her foods (fruit, potato chips, etc.)	190,673	0.2	178,100	0.1
her non-food items	47,622	[1]		
Totals, All Products	**127,058,560**	**100.0**	**142,909,600**	**100.0**

[1] Less than 0.05 p.c.

Direct Selling by Manufacturers and Specialist Agencies.—The first annual survey of rect selling, covering manufacturers and selected agencies specializing in direct-sales ethods, was taken in 1966. Table 14 shows that, over the four-year period 1966-69, such rect sales increased by more than 15 p.c., rising from $617,089,000 to $712,088,000. mong the industries surveyed, the largest share of sales was accounted for by manufac-rers and distributors of dairy products (23.6 p.c.); newspapers and magazines (18.0 p.c.); smetics (9.5 p.c.); books (8.2 p.c.); bakery products (7.2 p.c.); and electrical appliances

(7.0 p.c.)—nearly three quarters of all direct sales covered. The greatest growth, however occurred primarily in other areas: direct sales of kitchenware and appliances rose 62.4 p.c clothing, 55.4 p.c.; nursery seeds, stock and fertilizer, 42.9 p.c.; and cosmetics, 34.4 p.c.

The channels of distribution employed by direct sellers in 1969 were very similar those utilized in earlier years. As shown in Table **15**, door-to-door sales in that ye accounted for 72 p.c. of total sales, mail-order requests (excluding the mail-order busine of Canadian department stores) amounted to 19 p.c., and sales from manufacturers' premis were 6 p.c.; the remaining 3 p.c. was sold by various other methods of contacting the cu tomer.

14.—Direct Selling by Manufacturers and Specialist Agencies, 1966-69

Commodities	1966	1967	1968	1969	Percentag Change 1966-69
	$'000	$'000	$'000	$'000	
Meat, fish and poultry	5,408	4,925	5,873	6,672	+23.4
Frozen food plans	21,799	23,072	27,754	24,840	+14.0
Fruits, vegetables, juices and health foods	5,766	5,607	4,839	5,289	− 8.3
Dairy products	177,937	178,152	166,468	168,000	− 5.6
Bakery products	67,269	64,159	56,400	51,300	−23.7
Canvas awnings, tents, etc.	2,845	3,451	3,185	2,615	− 8.1
Clothing	8,767	8,667	13,661	13,628	+55.4
Fur goods	2,455	2,590	2,709	2,167	−11.7
Furniture	5,286	5,523	4,969	5,764	+ 9.0
Stamps, coins and personal stationery	5,634	5,950	6,105	6,532	+15 9
Books	45,332	51,164	52,290	58,087	+28.1
Newspapers and magazines	103,743	116,716	125,928	128,364	+23.7
Kitchenware and utensils	16,315	18,431	26,137	26,497	+62.4
Electrical appliances	32,279	34,617	44,626	49,778	+54.2
Nursery seeds, stock and fertilizer	3,509	3,957	4,159	5,016	+42.9
Pharmaceuticals and medicines	5,377	5,219	5,423	6.491	+20.7
Brushes, brooms, soaps and cleaners	17,414	17,428	20,398	20,679	+18.7
Cosmetics	50,102	54,353	64,314	67,337	+34.4
Phonograph records	14,453	18,140	16,852	14,158	− 2.0
Miscellaneous[1]	25,399	27,151	45,340	48,874	+92.4
Totals, All Commodities	**617,089**	**649,271**	**697,430**	**712,088**	**+15.4**

[1] Includes leather goods, jewellery and silverware, aluminum products, textiles, boats, other foods and beverage etc.

15.—Methods of Distribution of Direct Sales, 1969

Commodities	By Door-to-Door Canvassing	By Mail or Telephone	From Manu-facturers' Premises	Through Other Channels[1]
	p.c.	p.c.	p.c.	p.c.
Meat, fish and poultry	..	—	96	..
Frozen food plans	1	53	46	—
Fruits, vegetables, juices and health foods	98	..	—	..
Dairy products	100	—	—	—
Bakery products	100	—	—	—
Canvas awnings, tents, etc.	12	13	75	—
Clothing	..	66	13	..
Fur goods	—	—	100	—
Furniture	..	..	99	—
Stamps, coins and personal stationery	..	95	..	—
Books	43	56	1	—
Newspapers and magazines	79	13	1	7
Kitchenware and utensils	81	12	..	..
Electrical appliances	61	36	3	[2]
Nursery seeds, stock and fertilizer	—	78	22	—
Pharmaceuticals and medicines	93	7	[2]	—
Brushes, brooms, soaps and cleaners	100	—	—	—
Cosmetics	98	..	—	..
Phonograph records	—	100	—	—
Miscellaneous[3]	39	30	21	10
Totals, All Commodities	**72**	**19**	**6**	**3**

[1] Includes roadside stands, market stalls, kiosks, off-premises shows, exhibitions, house parties and other displa and demonstration avenues. [2] Less than 0.5 p.c. [3] See footnote to Table **14**.

Campus Book Stores.—As a supplement to its current retail trade series, the DBS s recently initiated a survey of book stores located on the campuses of universities and her post-secondary educational institutions. The pilot study was undertaken in the ring of 1969, covering the academic years 1966-67 and 1967-68, and a subsequent survey oduced a full range of data relating to the 1968-69 year. Table **16** provides summary ta on the sales of campus book stores for the three years.

16.—Retail Sales in Campus Book Stores, Academic Years Ended 1967-69

Province and Items Sold	Academic Years Ended— 1967	1968	1969	Percentage Change 1967-69
	$'000	$'000	$'000	
Province				
lantic Region	1,676	2,022	2,435	+45.3
Nova Scotia	*706*	*840*	*1,064*	*+50.7*
New Brunswick	*636*	*744*	*935*	*+47.0*
ebec	3,640	4,564	5,615	+54.3
tario	7,318	8,927	12,259	+67.5
nitoba	1,198	1,346	1,556	+29.9
katchewan	1,199	1,340	1,505	+25.5
erta	1,753	2,350	3,197	+82.4
tish Columbia	2,813	3,158	3,573	+27.0
Totals	**19,596**	**23,707**	**30,140**	**+53.8**
Items Sold				
t books[1]	14,638	..	20,226	+62.9
de books[2]		..	3,619	
tionery and supplies	3,194	..	4,255	+33.2
cellaneous[3]	1,764	..	2,040	+15.6

[1] Includes all professional and educational books. [2] Includes both hard cover and paper backs. [3] Includes newspapers, magazines, periodicals and sundries.

holesale Trade

The sales of wholesale merchants,* as estimated in the course of a monthly sample vey of such establishments, have increased consistently over the past several years. 1969, they reached a new high of $18,046,000,000, nearly 6 p.c. above the $17,038,000,000 orded during 1968. Consumer goods wholesalers experienced a 6.9-p.c. increase in es, compared with a 5.1-p.c. rise for wholesalers of industrial goods. Only in the latter egory were there declines in any specific trades; the sales of coal and coke, grain and farm chinery wholesalers were all lower in 1969 than in the previous year.

Table **17** shows the annual sales of wholesale merchants in 26 kind-of-business groups during the period 1965-69. These data reflect changes in the wholesale trade series ught about by revisions to a 1964 benchmark, updating the figures from the previous 61) base. The intercensal revisions, parts of which are included here, were published a special report released by DBS in April 1969 entitled *Wholesale Trade, 1951-1968* talogue No. 63-515).

* Excludes manufacturers' sales branches, agents and brokers, primary product dealers, and petroleum bulk ts and distributors; see *Wholesale Trade*, December 1969 (Catalogue No. 63-008).

17.—Sales of Wholesale Merchants, by Kind of Business, 1965-69

NOTE.—Components may not add to totals due to rounding.

Kind of Business	1965	1966	1967	1968	1969	Percentage Change 1968-69
	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000	
Consumer Goods Trades	**6,550**	**6,956**	**7,437**	**8,012**	**8,562**	+ 6.9
Automotive parts and accessories	551	594	644	703	816	+16.1
Motor vehicles	211	194	220	324	335	+ 3.4
Drugs and drug sundries	326	363	388	412	452	+ 9.7
Clothing and furnishings	175	179	189	197	201	+ 2.0
Footwear	39	41	41	43	44	+ 2.3
Other textiles and clothing accessories	306	305	315	322	343	+ 6.5
Household electrical appliances	298	346	378	401	458	+14.2
Tobacco, confectionery and soft drinks	557	600	667	715	758	+ 6.0
Fresh fruits and vegetables	358	370	386	431	454	+ 5.3
Meat and dairy products	397	448	463	469	511	+ 9.0
Floor coverings	105	105	109	111	121	+ 9.0
Groceries and food specialties	2,240	2,396	2,550	2,746	2,884	+ 5.0
Hardware	454	484	491	494	513	+ 3.8
Other consumer goods	535	531	596	645	672	+ 4.2
Industrial Goods Trades	**7,858**	**8,594**	**8,814**	**9,026**	**9,484**	+ 5.1
Coal and coke	97	84	82	72	68	− 5.6
Grain	1,306	1,418	1,459	1,443	1,248	−13.5
Electrical wiring supplies, construction materials, apparatus and equipment	232	277	290	298	323	+ 8.4
Other construction materials and supplies, including lumber	1,752	1,929	2,006	2,205	2,375	+ 7.7
Farm machinery	640	723	736	630	597	− 5.2
Industrial and transportation equipment and supplies	1,421	1,594	1,599	1,607	1,814	+12.9
Commercial, institutional and service equipment and supplies	260	309	356	377	416	+10.3
Newsprint, paper and paper products	322	364	372	392	408	+ 4.1
Scientific and professional equipment	167	199	229	243	268	+10.3
Iron and steel	501	539	530	534	634	+18.7
Junk and scrap	329	354	348	350	406	+16.0
Other industrial goods	831	803	809	876	927	+ 5.8
Totals, All Trades	**14,408**	**15,550**	**16,250**	**17,038**	**18,046**	+ 5.9

In addition to the major monthly survey of wholesale merchants, two annual surveys of wholesale sales at the commodity level are also undertaken by DBS—farm implements and equipment, and construction machinery and equipment. It should be noted that estimates of farm implement and equipment sales are also published monthly, in aggregate form, based on the data reported by a panel of major-line companies.

Farm Implements and Equipment.—Sales of farm implements and equipment (valued wholesale prices) declined in 1969 for the second consecutive year. The sales total of 4,309,000 was 8.9 p.c. lower than the comparable 1968 figure of $378,131,000. However, es declines were limited to the three Prairie Provinces of Manitoba (−21.9 p.c.), Sas-chewan (−25.7 p.c.) and Alberta (−11.0 p.c.). Saskatchewan, which formerly ac-unted for the largest share of farm implements and equipment sales (in 1969, it was tario), experienced the greatest decline for the third consecutive year. Table 18 gives a on sales for 1965-69; sales of repair parts, not shown, were $65,751,000 in 1969, 2.8 p.c. her than the record $63,955,000 reached in the previous year.

—Sales of Farm Implements and Equipment, by Province and by Major Group, 1965-69

NOTE.—Data are based on a commodity survey and therefore exclude sales of other products and receipts from ndary activities, including repairs, carried out by respondents. The figures are not comparable with those given able 17.

Province and Major Group	1965	1966	1967	1968	1969	Percentage Change 1968–69
	$'000	$'000	$'000	$'000	$'000	
Province						
ntic Provinces	9,049	11,259	13,101	11,727	11,808	+ 0.7
bec	31,664	38,874	49,495	49,428	53,449	+ 8.1
ario	72,936	87,085	96,865	89,124	92,832	+ 4.2
nitoba	49,341	55,774	50,923	44,451	34,719	−21.9
katchewan	118,768	126,201	116,453	92,103	68,402	−25.7
erta	82,218	89,403	95,777	80,571	71,724	−11.0
ish Columbia	7,348	8,318	9,685	10,727	11,375	+ 6.0
Totals	**371,324**	**416,914**	**432,299**	**378,131**	**344,309**	**− 8.9**
Major Group						
ctors and engines	122,021	149,467	153,064	128,829	118,631	− 7.9
ughs	17,228	19,659	20,864	15,967	10,903	−31.7
ing, cultivating and weeding achinery	23,537	28,807	33,763	28,687	22,463	−21.7
nting, seeding and fertilizing achinery	15,743	20,117	23,607	19,134	16,440	−14.1
ving machinery	29,984	29,853	27,952[r]	26,397	23,231	−12.0
vesting machinery	113,074	110,032	107,213	99,042	69,156	−30.2
chines for preparing crops for arket or for use	12,894	15,378	14,900	14,895	18,849	+26.5
m wagons, boxes and sleighs	4,376	5,740	6,795[r]	7,258	8,784	+21.0
n equipment	7,387	10,078	12,775	12,702	19,540	+53.8
m dairy machinery and equip-ent	8,025	6,816	9,006	8,441	10,598	+25.6
aying and dusting equipment	2,385	3,406	4,017	3,716	4,397	+18.3
ps and irrigation equipment and iscellaneous farm equipment[1]	14,670	17,561	18,343	13,063	21,317	+63.2

[1] Designated as "Miscellaneous farm equipment" prior to 1967.

Construction Machinery and Equipment.—This survey, which was first undertaken for year 1967 and since repeated for 1969, was designed to measure the sales of Canadian tributors and direct sales of manufacturers to end-users in the construction machinery l equipment field and to assess the revenue derived from rentals. As shown in Table 19, al sales and rental revenue amounted to $705,724,000, almost 80 p.c. of which was lized through the sale of new machinery and equipment. The 1969 survey for the first e produced additional information on the disposal of new construction machinery and ipment to end-users through such arrangements as first rental, demonstration or loan; value of such machinery and equipment reached $52,366,509 in 1969.

19.—Sales and Rentals of Construction Machinery and Equipment, by Major Commodity Group, 1969

Item	New Machinery and Equipment				Used Machinery and Equipment	Rental Revenu
	Sold Outright to End-Users		Supplied by Other Arrangement[1]			
	Units	Value	Units	Value		
		$		$	$	$
Tractors, crawler-type	1,776	75,251,568	272	15,091,080	28,117,703	9,598,40
Tractors, wheel-type	818	11,144,768	33	733,328	2,634,957	980,3
Front-end loaders, wheel-type	1,393	55,553,286	174	9,455,677	8,794,201	5,108,0
Tractor and front-end loader attachments	813	3,270,642	..	..	709,973	182,0
Scrapers, dig-carry-haul	81	6,803,018	27	2,128,984	4,148,139	1,506,9
Dump wagons, semi-trailers, heavy duty, off-highway haulers	179	16,529,005	14	1,452,800	1,430,150	1,325,7
Excavator/cranes, crawler-mounted	227	17,392,339	53	4,457,966	4,708,348	2,618,9
Excavator/cranes, tire-mounted	213	15,028,385	75	5,144,668	2,041,223	1,873,6
Excavator/crane attachments	157	586,942	—	—	74,980	..
Tower and climbing cranes	26	1,082,958	..	..	732,155	1,295,6
Trenchers and ditchers	132	2,146,842	32	189,816	474,351	158,1
Graders, motor	427	14,167,121	43	2,006,162	3,633,414	969,6
Logging skidders	1,230	20,387,238	..	..	6,091,091	3,809,7
Rollers, road, self-propelled	163	1,246,283	15	264,899	577,252	377,6
Compactors, vibratory	67	1,165,919	9	169,778	662,921	993,5
Rollers and compactors, hand-guided, motorized, all types	540	1,329,220	182	566,615	401,404	941,4
Air compressors, portable	620	5,339,426	88	1,448,108	2,654,258	3,985,4
Rock drills	866	4,358,258	35	765,541	1,463,448	1,218,5
Pumps, contractors	5,632	2,970,447	595	622,662	499,979	1,364,6
Contractors' tools	1,837	1,006,052	189	122,510	152,859	523,1
Concrete machinery	539	7,439,746	..	..	525,334	253,0
Asphalt equipment	87	4,843,688	..	..	673,995	..
Aggregate processing equipment	664	13,679,094	16	838,479	3,234,928	699,6
All other construction machinery and equipment	...	85,032,417	...	1,777,312	10,098,039	12,639,7
All repairs and consumable parts	...	192,636,437	...	...	8,276,972	...
Totals, All Items	...	**569,391,099**	...	**52,366,509**	**92,812,074**	**52,520,5**

[1] Includes: first rental, first demonstration and first loans.

Service Trades

Hotels.—In addition to its annual hotel survey (Catalogue No. 63-204), DBS als reports semi-annually on the trend of hotel receipts in Canada, based on results obtaine from a panel of hotels having 50 or more rooms. Table **20** shows that the receipts of suc hotels increased by more than 31 p.c. during the 1965-69 period. The best results we experienced in British Columbia and Alberta, and the poorest in Newfoundland and Prin Edward Island (combined) and in Saskatchewan. On a year-to-year basis, the greate rise took place between 1966 and 1967, as Canada's Centennial-year celebrations produce a significant volume of hotel business. The let-down from 1967 to 1968 was most acutel felt in Quebec, which had shown the greatest increase in the previous year. From 196 to 1969, hotel receipts in most provinces (except New Brunswick and Saskatchewa increased at a faster rate than in the previous year. Alberta and Quebec, in particula registered sizable increases during 1969. In contrast, hotel receipts in Saskatchewa have been trending downward, with successively smaller rates of growth each year fro 1966 onward.

20.—Percentage Change in Hotel Receipts, by Province, 1965-69

Province	1965-66	1966-67	1967-68	1968-69	1965-69
foundland	− 3.5	− 1.1	+ 1.9	+ 2.4	− 0.4
ce Edward Island					
a Scotia	+ 4.9	+ 3.2	+ 8.1	+10.4	+29.2
Brunswick	+ 2.9	+ 3.2	+10.2	+ 3.3	+20.9
bec	+ 8.5	+19.9	−20.7	+12.0	+15.5
ario	+ 7.0	+13.3	+ 2.8	+ 8.5	+35.2
itoba	+ 4.5	+11.0	+ 7.1	+ 8.0	+34.2
katchewan	+ 2.5	+ 5.5	+ 3.2	+ 1.6	+13.4
erta	+ 7.8	+ 4.5	+12.7	+14.9	+45.9
ish Columbia[1]	+12.3	+ 8.4	+ 9.8	+ 9.8	+46.8
Canada	**+ 7.7**	**+12.5**	**− 1.4**	**+ 9.9**	**+31.3**

[1] Includes the Yukon and Northwest Territories.

Restaurants.—The same forces that shaped hotel business during recent years were evident in another large area of the service trades—restaurants and other eating places. was these forces that produced the largest year-over-year increase in Quebec between 6 and 1967, and that resulted in the largest decline in the same province between 1967 1968. As indicated in Table **21**, restaurant receipts rose by more than $200,000.000 0 p.c.) over the 1965-69 period. The largest percentage growth took place in Alberta 2 p.c.) and British Columbia (34.1 p.c.) and the smallest in Newfoundland and Saschewan. An absolute decline was recorded in only one province—Saskatchewan.

21.—Restaurant Receipts, by Province, 1965-69

Province	1965	1966	1967	1968	1969	Percentage Change 1965-69
	$'000	$'000	$'000	$'000	$'000	
foundland	10,736	11,704	11,691	10,541	11,205	+ 4.4
ce Edward Island	2,938	3,225	3,223	3,385	3,211	+ 9.3
a Scotia	24,416	25,512	27,381	28,337	29,093	+19.2
Brunswick	19,634	20,765	21,543	22,643	24,149	+23.0
bec	341,714	364,555	403,494	395,228	405,358	+18.6
rio	351,502	380,284	393,651	405,880	409,306	+16.4
itoba	47,161	49,676	51,453	53,582	56,491	+19.8
atchewan	40,266	42,219	41,904	42,009	38,428	− 4.6
rta	69,946	77,850	85,039	92,893	100,154	+43.2
sh Columbia[1]	90,931	102,562	99,594	111,613	121,971	+34.1
Canada	**999,244**	**1,078,352**	**1,138,973**	**1,166,111**	**1,199,366**	**+20.0**

[1] Includes the Yukon and Northwest Territories.

Motion Picture Theatres.—In 1968,* the receipts of motion picture theatres, both ular and drive-in, reached their highest level in the past 14 years—and the highest level for drive-ins alone. The total of $113,697,252 received was 9.8 p.c. higher than in 7 and the amount of amusement taxes collected rose to $8,199,630, up 13.6 p.c. over the vious year. The increase in revenues was not evenly split; drive-in theatre receipts v at a somewhat faster rate (+14.9 p.c.) than those of regular motion picture theatres .1 p.c.). In contrast to the revenue and tax increases, the number of admissions for ypes of theatres declined in 1968 for the fourth successive year, dropping 0.4 p.c. to 88,785. As in previous years, the decline in admissions was restricted to regular thea-, which lost nearly 600,000 customers between 1967 and 1968.

* Latest data available at time of writing.

22.—Summary Statistics of Motion Picture Theatre Operations, 1967 and 1968

Item		1967			1968		
		Regular	Drive-in	Total	Regular	Drive-in	Total
Establishments	No.	1,156	253	1,409	1,148	261	1,
Receipts from admissions	$	90,804,524	12,759,308	103,563,832	99,041,543	14,655,709	113,697,
Amusement taxes	$	6,428,709	787,325	7,216,034	7,267,592	932,038	8,199,
Paid admissions	No.	85,530,648	12,042,246	97,572,894	84,936,845	12,251,940	97,188,
Employees—							
Male	No.	5,865	1,481	7,346	5,923	1,529	7,
Female	"	4,695	1,231	5,926	5,041	1,347	6,
Salaries and wages	$	20,214,706	3,199,556	23,414,262	21,355,685	3,691,379	25,047,

Film Exchanges.—During 1968,* films were distributed by 56 companies throu 120 offices located across Canada. These exchanges had total receipts of $64,653,2 compared with $56,551,239 in 1967 and paid $4,733,799 in salaries and wages to 761 e ployees. (The activities of the National Film Board of Canada are not included here; th are covered in the Board's Annual Report, available from Information Canada, Ottaw

Receipts from the rental of films increased by $8,087,642 (14.4 p.c.) during 1968 reach a new high of $64,186,740. Revenue derived from rentals for theatrical use amoun to $43,624,234, for television use $19,682,511 and for other (non-theatrical) use $879,9 In addition, $25,893 was derived from the sale of advertising and $440,585 from ot sources. New films released for theatrical bookings numbered 1,047, of which 649 w feature films, 114 cartoons, 166 newsreels and 118 other short subjects. Of the 649 feat films, 314 originated in the United States, 121 in France, 80 in Italy, 52 in Britain, eight Canada and 74 in other countries.

23.—Summary Statistics of Film Exchanges, 1965-68

Item		1965	1966	1967	1968
Companies	No.	63	62	57	
Exchange offices	"	128	126	116	1
Average Employees—					
Male	No.	394	414	376	3
Female	"	373	399	387	4
Salaries and Wages—					
Male	$	2,743,629	3,049,039	3,196,152	3,149,2
Female	$	1,268,080	1,376,208	1,471,448	1,584,5
Receipts—					
Film rentals	$	46,206,778	53,039,160	56,099,098	64,186,7
Sale of advertising	$	85,503	40,258	34,494	25,8
Other sources	$	844,766	309,745	417,647	440,5

Motion Picture Production.—In 1969, there were 89 private (non-governme firms engaged principally in the production and printing of motion picture films and fil strips for industry, government, education and entertainment purposes. These fir employed 1,127 persons, paid $7,680,062 in salaries and wages, and had a gross revenue $26,864,914, slightly lower than in 1968. Excluded from these data are television stati and two private firms engaged only partially in motion picture production; the lat produced 21 commercial advertising films, all for television use.

* Latest data available at time of writing.

24.—Summary Statistics of Motion Picture Production by Private Firms, 1965-69

Item		1965	1966	1967	1968	1969
rms	No.	74	82	93	95	89
nployees[1]	"	891	944	1,161	1,186	1,127
laries and wages[1]	$	4,687,194	4,852,789	6,668,977	7,415,928	7,680,062
ross revenue	$	14,257,262	17,943,784	22,734,605	26,901,602	26,864,914
Production	$	*8,639,638*	*11,458,394*	*14,475,088*	*16,060,025*	*15,248,054*
Printing and laboratory	$	*4,543,402*	*5,110,540*	*7,546,162*	*9,917,026*	*10,190,191*
Other	$	*1,074,222*	*1,374,850*	*713,355*	*924,551*	*1,426,669*

[1] Excludes proprietors of unincorporated businesses.

Table **25** shows the motion picture production records of both private industry and overnment agencies during 1968 and 1969. Of the 5,515 films produced in Canada in 969, 5,429 were in the English or French languages. During that year, Canadian motion cture production fell significantly below the 1968 level of activity; production by private rms declined 31.7 p.c. and by government agencies, 13.6 p.c. In total, private and governent film producers printed 4,005,200 ft. of 8mm film, 49,320,793 ft. of 16mm film and 006,987 ft. of 35 mm film in black and white; and 1,201,925 ft. of 8mm film, 47,389,572 ft. 16mm film and 9,702,797 ft. of 35mm film in colour. Included in these figures were 13 und motion pictures of five minutes or longer duration made for other than Canadian onsors.

25.—Canadian Motion Picture Production, 1968 and 1969

Year and Type of Production	Private Industry				Government	Private and Government
	Quebec	Ontario	Other Provinces	Total		
	No.	No.	No.	No.	No.	No.
1968						
lms in English or French	**2,824**	**4,028**	**424**	**7,276**	**549**	**7,825**
Theatrical feature films	1	1	—	2	5	7
Theatrical shorts	—	4	—	4	24	28
Television entertainment	555	72	21	648	—	648
Television information or documentary	345	193	32	570	28	598
Non-theatrical (also non-TV) motion pictures	77	327	18	422	152	574
Silent motion pictures	6	441	103	550	130	680
Television commercials	412	2,180	171	2,763	28	2,791
Theatre commercials	8	5	—	13	3	16
Other (newsreels, news clips, trailers, titles, etc.)	1,415	701	74	2,190	176	2,366
Silent filmstrips	1	11	1	13	—	13
Sound filmstrips	4	93	4	101	3	104
lms in Other than English or French	**1**	**13**	—	**14**	**70**	**84**
1969						
lms in English or French	**1,307**	**3,330**	**328**	**4,965**	**464**	**5,429**
Theatrical feature films	11	—	—	11	8	19
Theatrical shorts	8	5	—	13	38	51
Television entertainment	376	23	5	404	—	404
Television information or documentary	102	87	28	217	27	244
Non-theatrical (also non-TV) motion pictures	28	357	20	405	127	532
Silent motion pictures	9	28	46	83	109	192
Television commercials	553	2,519	168	3,240	49	3,289
Theatre commercials	10	1	—	11	5	16
Other (newsreels, news clips, trailers, titles, etc.)	147	283	56	486	75	561
Silent filmstrips	15	10	1	26	24	50
Sound filmstrips	48	17	4	69	2	71
lms in Other than English or French	**1**	**14**	—	**15**	**71**	**86**

Power Laundries, Dry Cleaning and Dyeing Plants.—In 1968,* the combi receipts of laundries and dry cleaning and dyeing plants increased by 2.1 p.c. over previous year's level, reaching a new high of $270,628,560. Power laundries repor revenues of $108,714,737, 3.3 p.c. higher than in 1967, and dry cleaning and dyeing pla reported $161,913,823, an increase of 1.4 p.c. In total, 2,554 laundries, dry cleaners a dyers employed 34,488 people and paid out $124,605,691 in salaries and wages. The c of materials and supplies used in their operations amounted to $26,328,214—1.4 p.c. m than in 1967. The upward trends reflected in these statistics provide further evidence the increasingly important role that such "personal service" trades have assumed in t economic life of the nation.

26.—Summary Statistics of Power Laundries and Dry Cleaning and Dyeing Plants, by Source of Receipts and by Province, 1966-68

Item		Power Laundries			Dry Cleaning and Dyeing Plant		
		1966	1967	1968	1966	1967	1968
Plants	No.	363	362	378	2,107	2,150	2,1
Employees	No.	14,054	13,961	13,734	21,379	21,204	20,7
Male	"	*4,681*	*4,737*	*4,663*	*7,751*	*7,595*	*7,2*
Female	"	*9,373*	*9,224*	*9,071*	*13,628*	*13,609*	*13,5*
Salaries and wages	$	46,350,537	49,091,199	50,311,746	70,331,119	72,678,488	74,293,9
Cost of materials and supplies	$	8,054,301	8,652,528	8,660,336	16,935,909	17,307,595	17,667,8
Receipts—							
Laundry	$	38,622,581	39,140,995	39,312,958	24,833,258	27,456,379	26,255,4
Cleaning	$	13,278,360	14,213,623	13,139,394	117,206,153	120,916,131	124,120,2
Rental services	$	42,205,968	46,930,357	50,621,560	755,918	626,708	1,356,6
All others	$	5,314,260	4,971,214	5,640,825	11,094,931	10,729,009	10,181,5
Totals, Receipts	$	**99,421,169**	**105,256,189**	**108,714,737**	**153,890,260**	**159,728,227**	**161,913,8**
By Province—							
Newfoundland	$	619,673	698,354	726,255	1,663,287	1,652,341	1,778,7
Prince Edward Island	$				493,142	514,517	543,9
Nova Scotia	$	1,128,633	1,151,189	1,420,129	4,823,480	4,766,821	5,192,1
New Brunswick	$	1,973,172	2,028,063	1,887,854	2,657,287	2,683,145	3,071,4
Quebec	$	26,906,859	28,954,641	28,419,641	37,991,524	39,358,240	38,709,8
Ontario	$	39,647,271	42,033,247	44,784,938	66,255,070	69,865,769	70,554,1
Manitoba	$	2,801,549	4,000,510	3,528,792	8,839,353	7,697,058	7,789,6
Saskatchewan	$	1,801,564	1,697,308	1,939,956	5,450,998	5,333,895	5,507,1
Alberta	$	7,560,050	8,053,486	8,827,685	12,016,450	12,803,680	13,293,3
British Columbia[1]	$	16,982,398	16,639,391	17,179,487	13,699,669	15,052,761	15,473,4

[1] Includes the Yukon and Northwest Territories.

Advertising Agencies.—Billings of advertising agencies declined marginally durin 1968* to $426,144,921; commissionable billings (for advertising placed in publications, radi television and other media) and those for market surveys, research and other fees we moderately lower than those for 1967, but billings for production work done by agenc staff increased 9.1 p.c. Although both gross and net revenues fell below their comparab 1967 levels, the major decline was in net revenue (before income tax) which dropped 21. p.c.; gross revenue fell only fractionally.

* Latest data available at time of writing.

27.—Summary Statistics of Advertising Agencies, 1965-68

Item		1965	1966	1967	1968
ms	No.	159	165	176	171
nployees	"	4,698	4,973	5,138	4,919
Male	"	*2,491*	*2,574*	*2,618*	*2,511*
Female	"	*2,207*	*2,399*	*2,520*	*2,408*
aries and wages	$	37,049,736	40,771,172	44,034,036	44,651,258
llings	$	362,559,347	402,175,869	429,595,237	426,144,921
Commissionable	$	*354,650,007*	*392,542,021*	*420,092,360*	*416,627,895*
Production work	$	*3,614,697*	*4,145,388*	*4,753,410*	*5,184,912*
Market surveys, etc.	$	*4,294,643*	*5,488,460*	*4,749,467*	*4,332,114*
oss revenue	$	60,994,714	66,915,185	72,834,604	72,476,274
Commissionable billings	$	*52,883,006*	*57,082,209*	*63,118,282*	*62,648,503*
All other sources	$	*8,111,708*	*9,832,976*	*9,716,322*	*9,827,771*
t revenue	$	5,712,001	6,578,493	6,019,603	4,744,010

Table 28 shows the way in which commissionable billings of advertising agencies were located among the various media during 1965-68. Although radio's share remained ore or less constant over this period, the amount devoted to television advertising increased from 27.4 p.c. to 30.4 p.c. At the same time, billings for advertising in publications clined from 39.5 p.c. to 35.6 p.c. and for other visual advertising forms from 3.7 p.c. to 8 p.c.

28.—Percentage Distribution of Commissionable Billings, by Medium, 1965-68

Medium	1965	1966	1967	1968
	p.c.	p.c.	p.c.	p.c.
blications	39.5	38.8	37.2	35.6
levision	27.4	27.8	29.1	30.4
her visual, incl. billboards and signs	3.7	3.4	3.5	2.8
dio	10.4	10.5	11.3	11.6
oduction, artwork, etc.	18.9	19.5	18.5	19.2
her	0.1	--	0.4	0.4

Funeral Directors.—A survey of funeral directors was undertaken for 1968 as a llow-up to a similar enquiry carried out four years earlier. It will be continued on an casional basis to provide the industry (and other users of these statistics) with ratios d averages on the costs of funeral services. In 1968, there were 1,392 firms covered in e survey, with total receipts of $97,056,229. Average funeral costs ranged from a low $371 in Newfoundland to a high of $689 in Quebec.

29.—Summary Statistics on Funeral Directors, 1968

Province	Firms	Locations	Total Receipts	Average Funeral Cost[1]
	No.	No.	$	$
ewfoundland	14	15	757,887	371
ince Edward Island	19	22	515,338	409
va Scotia	71	87	3,510,062	457
w Brunswick	49	58	2,558,517	450
ebec	425	763	27,129,692	689
tario	543	592	42,189,551	602
anitoba	52	63	4,300,740	453
skatchewan	77	108	3,993,868	441
berta	58	98	5,128,316	431
itish Columbia, Yukon and Northwest Territories	84	97	6,972,258	372
Canada	**1,392**	**1,903**	**97,056,229**	**554**

[1] Includes cost of casket but excludes vaults and extra charges.

Credit Statistics

Sales Financing.—During 1969, for the second consecutive year, the value of ne financial paper purchased by Canadian sales finance companies rose markedly. Tl $1,933,000,000 of new paper purchases—the highest value ever recorded—was 19.6 p. above the previous year's total. The increase was felt mainly in the commercial ai industrial goods field, both for new and used commercial vehicles (up $97,000,000 or 42 p.c.) and for other commercial goods (up $132,000,000 or 44.6 p.c.). In the consumer goo field, new paper purchased on new passenger cars and other consumer goods rose by 11 p.c. but, for used passenger cars, purchases declined 2.1 p.c.

With the addition of a number of new companies for the first time, the outstandi balances of sales finance companies reached a new high in 1969 of $2,180,000,000—22 p. above the year-end 1968 total. As shown in Table **30**, the increases in balances outstan ing reflect those registered under "paper purchased". The greatest area of growth (simil to purchases) was in the commercial and industrial goods field, where outstanding balanc reached $916,000,000, an increase of 38.4 p.c. over 1968.

30.—Sales Finance Company New Paper Purchased and Balances Outstanding, by Class Goods, 1965-69

(Millions of dollars)

Class of Goods	Paper Purchased					Balances Outstanding Dec. 31—				
	1965	1966	1967	1968	1969	1965	1966	1967	1968	1969
Consumer Goods	**1,068**	**1,058**	**995**	**1,093**	**1,181**	**1,131**	**1,184**	**1,105**	**1,125**	**1,26**
New passenger cars	563	570	530	602	659	901	949	876	907	99
Used passenger cars	313	298	271	288	282					
Radio and television sets, household appliances, furniture and other	192	190	194	203	240	230	235	229	218	26
Commercial and Industrial	**509**	**468**	**462**	**523**	**752**	**665**	**668**	**632**	**662**	**91**
New commercial vehicles	129	147	149	171	251	216	254	235	258	36
Used commercial vehicles	51	51	51	56	73					
Other	328	270	262	296	428	449	414	397	404	55
Totals[1]	**1,577**	**1,526**	**1,457**	**1,616**	**1,933**	**1,796**	**1,852**	**1,737**	**1,787**	**2,18**

[1] Totals are not the exact addition of the components because of rounding of the figures.

Consumer Credit.—Although the total volume of credit extended to consumers b retail stores and selected financial institutions has grown progressively from the early 1950 to its record high level of $10,831,000,000 in 1969, the annual rates of increase have show a tendency to decline during periods of credit restraint and weakness in buyer demand The annual rate of increase in balances outstanding since 1963 averaged 12.7 p.c. Durin 1966, 1967 and again in 1969, however, "tight money" resulted in annual growth rates o 8.8 p.c., 10.8 p.c. and 13.0 p.c., respectively, compared with over 14 p.c. in other years The chartered banks, consumer loan companies and credit unions have been the most activ financial institutions engaged in this sphere of financing and have exhibited the larges propensity to growth in recent years. The figures in Table **31** are exclusive of variou forms of service and personal credit on which no detailed information is available.

31.—Consumer Credit Balances Outstanding, by Selected Holders, 1960-69

(Millions of dollars)

Year	Retail Trade Credit	Sales Finance Companies[1]	Consumer Loan Companies	Life Insurance Companies Policy Loans	Chartered Banks[2]	Credit Unions and Caisses Populaires	Other Credit Holders[3]	Total
0	960	828	549	344	857	433	49	4,020
1	1,005	756	594	358	1,030	451	56	4,250
2	1,039	801	714	372	1,183	523	62	4,694
3	1,088	874	810	385	1,432	614	67	5,270
4	1,147	1,035	904	398	1,793	705	74	6,056
5	1,216	1,131	1,043	411	2,241	813	88	6,943
6	1,260	1,184	1,163	450	2,458	937	104	7,556
7	1,286	1,105	1,303	486	2,977	1,094	121	8,372
8	1,329	1,125	1,513	553	3,665	1,247	152	9,584
9	1,415	1,264	1,782	645	4,147	1,401	177	10,831

[1] Credit on consumer goods only. [2] Includes personal loans other than secured loans, home improvement ns and mortgages. [3] Includes Quebec savings banks loans and oil company credit card balances.

Retail Credit.—This segment of consumer credit, comprising the value of accounts tstanding on the books of Canadian retailers (including department stores and their aptive" acceptance companies), has undergone a significant change during the 1960s in relative position among institutions that extend credit to consumers. At the end of 63, retail credit amounted to 20.6 p.c. of all consumer credit extended; by the end of 1969, wever, this share had declined to 13.1 p.c. The latter figure reflects the relatively slower nual growth rate (4.5 p.c.) which has characterized retail credit during the past decade, compared with the rate of 12.7 p.c. for all other selected credit holders in aggregate.

As shown in Table **32**, retail store credit—including the charge accounts of motor hicle dealers—amounted to $1,550,000,000 at the end of 1969. Of this amount, the eivables of department stores, furniture, television, radio and appliance stores and motor hicle dealers accounted for over two thirds. The 1969 total was 6.3 p.c. higher than year-end 1968.

32.—Retail Credit, 1960-69, and by Kind of Business, 1969

Year	Accounts Receivable (at end of period)	Kind of Business	Accounts Receivable (at end of period)		
			Instalment	Charge	Total
	$'000,000		$'000 000	$'000,000	$'000,000
		1969			
		Grocery and combination stores	..	..	38.1
		Department stores	..	..	692.9
		General stores	..	..	44.7
0	1,037.6	Motor vehicle dealers[1]	16.2	134.9	151.1
1	1,088.2	Service stations and garages	..	..	37.4
2	1,125.1	Men's clothing stores	12.6	18.6	31.2
3	1,182.8	Women's clothing stores	5.9	15.3	21.2
4	1,242.6	Family clothing stores	15.4	15.9	31.3
5	1,323.8	Hardware stores	7.0	38.6	45.6
6	1,373.5	Furniture, TV, radio and appliance stores	173.8	40.5	214.3
7	1,404.7	Fuel dealers	5.0	83.2	88.2
8	1,458.7	Jewellery stores	17.8	12.9	30.7
9	1,550.0	All other stores	39.7	83.6	123.3
		Totals, All Trades	..	..	**1,550.0**

[1] The charge accounts of motor vehicle dealers are not normally included as "consumer" credit (Table **31**) since y are extended mainly to businesses rather than to consumers.

Section 2.—The Marketing of Agricultural Products*

Subsection 1.—The Grain Trade, 1968-69 and 1969-70

The 1968-69 Crop Year.—Estimated domestic supplies of wheat, oats, barley, ry flaxseed and rapeseed totalled 2,285,300,000 bu. in the crop year 1968-69, 12 p.c. above th 1967-68 total of 2,036,100,000 bu. Marketings of these grains in the Prairie Provinc during the 1968-69 crop year amounted to 583,200,000 bu., which was a 4-p.c. decrease fro the 1967-68 level of 609,000,000 bu. and an 8-p.c. decrease from the ten-year (1957-5 1966-67) average of 632,800,000 bu. Marketings of wheat at 423,200,000 bu. were dow 7 p.c. and accounted for 73 p.c. of the total deliveries. Marketings of the other maj grains, with totals for 1967-68 and ten-year averages, respectively, in brackets and millions of bushels, were: oats, 41.6 (30.8, 45.8); barley, 81.8 (87.3, 93.7); rye, 3.8 (6.9, 7.3 flaxseed, 15.3 (7.9, 16.8); and rapeseed, 17.6 (20.0, 9.7).

As in the preceding year, an initial quota of 100 units was in effect at local deliver points at the beginning of the marketing year. Permit holders were entitled to deliver maximum of 400 bu. of wheat or 1,000 bu. of oats or 600 bu. of barley or 600 bu. of rye any combination of these grains which, when calculated on a unit basis, did not exceed 10 This initial unit quota was followed by general quotas based upon bushels per specified acr [Specified acreage consisted of each permit holder's acreage seeded to wheat (includi Durum), oats, barley and rye, the summerfallow acreage and the acreage seeded to eligib grasses and forage crops.] The first general quotas were established on Sept. 9, 1968.

Unfavourable weather during the fall season resulted in a substantial volume of th 1968 crop being harvested in damp condition. To assist producers holding large stocks damp grain, and to maximize the use of drying facilities in terminals, the Canadian Whea Board authorized, on Oct. 31, 1968, an advance quota delivery privilege for damp whea oats, barley and rye in excess of the established quotas, provided that the total quantit of grain delivered under the specified acreage quota plus this advance did not exceed quota of 3 bu. per specified acre.

Stocks in commercial positions were relatively high throughout the 1968-69 crop ye and the movement of grain into country elevators was therefore directly related to sal in both the export and domestic markets. The heavy farm supply of wheat, made up of wheat carryover of 233,000,000 bu. and a 1968 production of 629,000,000 bu., resulted i large volumes being marketed at each quota level. For these reasons the general quota advanced slowly throughout the crop year.

In the spring it appeared that, based on a normal delivery pattern, it would be possibl to accept delivery of a 6-bu. quota. However, because of large-scale abuse of quotas, i became evident that it would not be possible to reach this goal and that some station could not reach even a 5-bu. quota without additional car supply. The Board, therefor entered into an agreement with the railway companies, under which cars were placed a delivery points where space was needed to enable most producers to complete delivery the 5-bu. quota by the end of the crop year. On July 31, 1969, 12,406 cars were under-loa to Thunder Bay compared with a normal under-load for that time of year of about 7,50 cars. This movement of grain from country positions should have been more than sufficien to permit delivery of a 5-bu. quota but, even with the additional effort by the railways an the grain companies, there were still 159 delivery points on the 4-bu. quota at the end the crop year.

In July 1969, the Board instituted a policy to equalize delivery opportunities fo producers who were not able to complete the full 5-bu. quota in the 1968-69 crop yea Under this policy, referred to as the Deferred Delivery Permit Policy, eligible produce received additional delivery privileges during the 1969-70 crop year.

Effective Aug. 1, 1968, a delivery quota of 5 bu. per acre seeded or 250 bu., whicheve was greater, was established for flaxseed and for rapeseed. As in previous years, the produce

* Prepared in the Agriculture Division, Dominion Bureau of Statistics.

ıld deliver flaxseed or rapeseed within the existing quota to any delivery point at which ıce was available. On Oct. 31, 1968, the Board authorized an advance delivery quota damp flaxseed and damp rapeseed in excess of the established quota, provided it did not ceed 8 bu. per seeded acre or 400 bu., whichever was larger. On Feb. 17, 1969 the rape- d quota was increased to 8 bu. per seeded acre or 400 bu. The flaxseed quota was lared open at all delivery points for the balance of the 1968-69 crop year on Jan. 17, 1969 d for rapeseed on Mar. 4, 1969.

*Wheat.**—Domestic supplies of wheat in 1968-69 were at an all-time high of 1,315,400,000 ., 12 p.c. above the 1967-68 total of 1,169,700,000 bu. and 5 p.c. more than the previous ord of 1,247,500,000 bu. in 1966-67. The 1968 production of wheat was 649,800,000 bu. mpared with 592,900,000 bu. in 1967 and carryover stocks were 665,500,000 bu. com- red with 576,800,000 bu. Exports of wheat and flour in terms of wheat, at 305,800,000 ., were 9 p.c. below the 336,000,000 bu. exported in 1967 and 24 p.c. less than the ten-year erage of 402,900,000 bu., but surpassed the long-term average of 304,600,000 bu.

During the crop year 1968-69, marketing of western Canadian wheat was again con- cted by the Canadian Wheat Board on a one-year Pool basis, the initial payment being .70 per bu. basis No. 1 Northern in store Thunder Bay or Vancouver. There were no justment or interim payments on the 1968-69 wheat Pool but a Government payment on ırum wheat amounting to $6,555,614 was announced on May 12, 1970.

The International Grains Arrangement (IGA) came into effect on July 1, 1968, replac- the International Wheat Agreement (IWA), which had been in effect since Aug. 1, 1962. e IGA consists of two legal instruments—a Wheat Trade Convention and a Food Aid nvention. The International Wheat Council established under the IWA remains for the rpose of administering the Wheat Trade Convention and of providing service to the od Aid Committee.

At the start of the 1968-69 crop year, export prices were generally at or slightly above A minimum levels, but came under severe pressure as the third successive bumper wheat)p was harvested in 1968, resulting in extreme competition for available markets from th IGA member exporters and non-member suppliers. Thus, there was a general decline the prices of soft wheat which were in the heaviest supply position. In addition, quality eats from Australia and the Soviet Union came on the European market in quantity for e first time, on a guaranteed protein basis at prices well below prices for comparable eats as set out in the IGA schedule.

Efforts were made in the Prices Review Committee to stabilize the market and prevent e erosion of prices below IGA minimum levels. The Committee was asked to establish nimum prices for new grades and qualities coming into prominence which were not listed the schedule to the Convention, and to establish related prices for wheats available from n-member countries. This latter procedure is implicit in the agreement to enable im- rters to fulfil their commitment to purchase wheat from non-member countries at prices nsistent with the price range established under Article 6. It proved impossible within e Committee to reach a consensus on such price levels for unscheduled wheat and, con- quently, there was further deterioration in soft wheat prices due to competitive factors d, in the quality wheats, the new types began to take over a substantial share of the com- rcial market. This development affected Canada, particularly in Britain and Western rope, and in March 1969 Canada informed the Prices Review Committee that it could longer strictly observe the IGA minimum prices as established for Canadian grades but st meet competition in the marketplace. In subsequent months, there were successive wnward movements in the export prices of most wheats to the extent that by the end of e crop year wheat was generally trading at levels substantially below IGA minima.

Following on the failure of the Prices Review Committee to cope with this situation, exporters multilaterally began a series of detailed technical discussions to identify cific technical difficulties in price determination and to co-ordinate their policies so as to

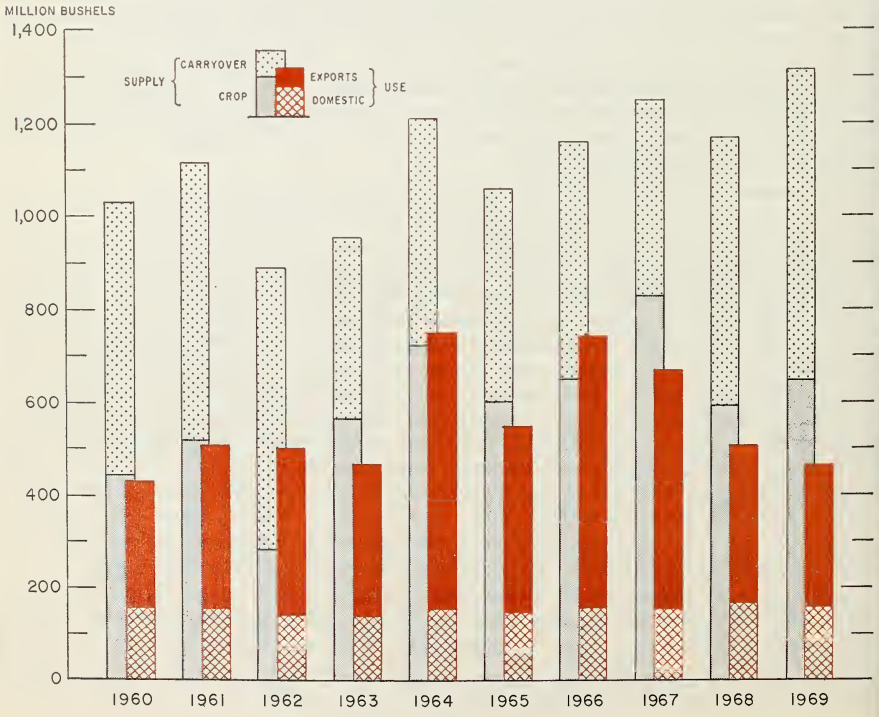
* The data dealing with the operation of the International Grains Arrangement was taken from the 1968-69 ual Report of the Canadian Wheat Board.

stabilize and strengthen the price situation to the degree possible. These meetings co tinued into the new crop year, outside the venue of the IGA, and by mid-September h been successful in achieving a high degree of stability in the international market and greater degree of co-operation and understanding of mutual problems among the maj exporters.

The 1968-69 exports of bulk wheat, at 280,500,000 bu., were below the preceding yea total of 310,700,000 bu. and also lower than the recent ten-year average of 362,900,000 b During the 1968-69 crop year, the People's Republic of China became Canada's princi wheat customer, importing 82,000,000 bu.; Britain was Canada's second largest whe market with imports of 55,700,000 bu. and Japan third with purchases of 43,300,000 b Other leading markets during 1968-69, with quantities in millions of bushels (1967- figures in brackets), were: India, 15.3 (22.4); Italy, 15.2 (10.2); Federal Republic of Ge many, 12.8 (17.5); Belgium and Luxembourg, 7.5 (9.9); Netherlands, 5.8 (5.0); Switzerlan 5.7 (2.6); France, 4.4 (0.9); Poland, 3.4 (5.8); and Venezuela, 3.0 (3.1).

The export movement of Canadian wheat flour during the 1968-69 crop year amount to 10,700,000 cwt. (24,600,000 bu. of wheat equivalent), unchanged from the 1967-68 tot Cuba was Canada's major customer for wheat flour, taking 5,400,000 cwt., or 12,500,000 b of wheat equivalent, and accounting for 51 p.c. of the crop year total; Britain, with impor equivalent to some 2,500,000 bu., accounted for 10 p.c. of the crop year total and Gha imported 1,300,000 bu.

SUPPLY AND DISPOSITION OF CANADIAN WHEAT
CROP YEARS ENDED JULY 31, 1960-69



Other Grains.—During the 1968-69 crop year, initial payments for oats, basis No. 2 W. in store Thunder Bay, and barley, basis No. 3 C.W. Six-Row in store Thunder Bay, re 65 cents per bu. and 106 cents per bu., respectively, the same as in 1967-68. There re no final payments on the 1968-69 oats and barley Pools.

Combined exports of oats, seed oats, barley, rye, flaxseed and rapeseed (including stoms exports of oatmeal and rolled oats, and malt in terms of grain equivalent) amounted 61,100,000 bu. during the crop year 1968-69. This figure was below the comparable 67-68 level of 74,600,000 bu. and the ten-year (1957-58—1966-67) average of 89,900,000 bu.

Exports of Canadian oats in bulk totalled 2,300,000 bu. during 1968-69 compared with 00,000 bu. during the previous year. The major market for this grain was the United ates which imported 900,000 bu., and other shipments went to the Netherlands, 400,000 ; Egypt, 300,000 bu.; Ireland and Switzerland, 200,000 bu. each; Britain and Belgium d Luxembourg, 100,000 bu. each. Exports of Canadian oatmeal and rolled oats amounted the equivalent of 79,000 bu. in 1968-69 against 95,000 bu.

Barley exports, at 21,200,000 bu., declined sharply from the 1967-68 level of 36,100,000 . Britain was Canada's major customer, increasing its imports in 1968-69 to 10,900,000 from 1,900,000 bu. in 1967-68 and replacing Japan which reduced its purchases from 400,000 bu. in 1967-68 to less than 1,000,000 bu. The United States purchased 7,700,000 , compared with 4,400,000 bu. in 1967-68 and Israel took 1,300,000 bu., Ireland, 500,000 and U.S. Oceania, 100,000 bu. Shipments of malt were the equivalent of 5,200,000 bu. mpared with 5,300,000 bu. in 1967-68; they went to 21 different destinations, the major rkets being Japan, 1,100,000 bu.; United States, 1,000,000 bu.; and the Philippines and nezuela, 700,000 bu. each.

Exports of Canadian rye amounted to 4,200,000 bu. in 1968-69 compared with 4,800,000 in the previous year. The principal markets were Japan, 1,600,000 bu.; Norway and the ited States, 900,000 bu. each; Britain, 500,000 bu.; and the Netherlands, 300,000 bu.

During 1968-69, clearances of Canadian flaxseed moving overseas amounted to 400,000 bu. against 12,600,000 bu. in the previous year. Japan was the leading market, porting 4,900,000 bu., followed by the Netherlands and Britain with 2,200,000 bu. each l the Federal Republic of Germany with 1,400,000 bu. Smaller shipments went to some other overseas destinations. Most of the exports of linseed oil, equivalent to about),000 bu. of flaxseed, went to Britain. Trade in rapeseed amounted to 14,300,000 bu., all-time high for this oilseed; Japan purchased 10,900,000 bu. Mustard seed exports, at 60,000 bu., were also above the 1967-68 level of 2,200,000 bu. and went mainly to the ited States, the Netherlands, Belgium and Luxembourg, Japan and the Federal Republic Germany.

The 1969-70 Crop Year.—The 1969-70 crop year opened with carryover stocks of the major grains (wheat, oats, barley, rye, flaxseed and rapeseed) at 1,199,000,000 bu. cks of wheat at Aug. 1, 1969 amounted to 851,800,000 bu., significantly higher than the ,500,000 bu. held in storage a year earlier. Aug. 1 stocks of the other major grains in lions of bushels (1968-69 figures in brackets) were: oats, 128.7 (77.0); barley, 199.4 0.9); rye, 8.7 (7.5); flaxseed, 4.9 (4.7); and rapeseed, 5.1 (9.9).

Domestic production of the six major grains reached 1,511,500,000 bu. in 1969-70. eat increased to 684,300,000 bu. from 649,800,000 bu. in 1968-69, resulting in a total pply for the 1969-70 crop year of 1,536,100,000 bu., an all-time high. Oats rose to ,400,000 bu. from the previous crop-year total of 362,500,000 bu., resulting in a supply 500,000,000 bu. in 1969-70. An estimated 378,400,000 bu. of barley were produced ich, combined with opening stocks, resulted in a supply for 1969-70 of 577,800,000 bu. e production rose to 16,500,000 bu. from 13,000,000 bu. in 1968-69, resulting in a supply 1969-70 of 25,200,000 bu. Flaxseed and rapeseed production also increased to 27,500,000 and 33,400,000 bu., respectively, the supplies amounting to 32,500,000 bu. and 38,500,000 , respectively.

Farmers' marketings of the six grains during the 1969-70 crop year amounted 659,300,000 bu., an increase of 13 p.c. over the 1968-69 total of 583,200,000 bu. Deliveri of wheat and oats were lower than in 1968-69, but the other grains registered increas Marketings of wheat at 411,800,000 bu. were down by 2.7 p.c. and accounted for 62.4 p. of all deliveries. Marketings of the other major grains in millions of bushels (1968- totals in brackets) were: oats, 21.0 (41.6); barley, 168.4 (81.8); rye, 7.6 (3.8); flaxsee 22.1 (15.3); and rapeseed 28.5 (17.6).

During 1969-70, Canada exported 476,900,000 bu. of the six major grains, includi 27,000,000 bu. of wheat flour in terms of wheat equivalent. Export clearances of whe rose to 317,700,000 bu., some 13 p.c. above the 1968-69 total of 280,500,000 bu. but near 14 p.c. below the ten-year (1959-60—1968-69) average of 369,200,000 bu. Exports of oa at 4,800,000 bu. were more than double the 1968-69 total of 2,300,000 bu. Barley expo rose to 82,700,000 bu. from the 1968-69 level of 21,200,000 bu. and rye exports declined 3,800,000 bu. from 4,200,000 bu. Flaxseed and rapeseed exports both registered lar gains in 1969-70, rising to 18,600,000 bu. from 13,400,000 bu. and 22,200,000 bu. fro 14,300,000 bu., respectively.

Total domestic consumption of wheat in Canada rose to 178,600,000 bu. in 1969- from 157,700,000 bu. in 1968-69, largely as a result of increased use of wheat in livesto feeding. Domestic utilization of oats rose to 352,500,000 bu. from 308,100,000 bu., barley to 287,700,000 bu. from 230,500,000, of rye to 10,600,000 bu. from 7,600,000 bu., flaxseed to 8,000,000 bu. from 6,000,000 bu. and of rapeseed to 12,600,000 bu. from 9,900,0 bu.

Stocks of wheat at the close of the crop year on July 31, 1970 stood at 1,011,000,000 b 19 p.c. above the closing stocks of the previous year. Year-end stocks of the other maj grains in bushels, were: oats, 142,300,000 bu.; barley, 201,800,000 bu.; rye, 10,700,000 b flaxseed, 5,800,000 bu.; and rapeseed, 3,700,000 bu.

33.—Supply and Disposition of Canadian Grain, Crop Years Ended July 31, 1968 and 19

(Millions of bushels)

Item	Wheat	Oats	Barley	Rye	Flaxseed	Rapese
Crop Year 1967-68						
Carryover, Aug. 1, 1967	576.8	109.8	131.8	8.3	11.8	5.8
Production in 1967	592.9	304.2	248.7	12.0	9.4	24.7
Imports	—	—	—	—	[1]	—
Totals, Supply	**1,169.7**	**414.0**	**380.4**	**20.3**	**21.2**	**30.5**
Exports[2]	336.0	3.5	41.4	4.8	12.6	12.3
Domestic use[3]	168.2	333.5	208.1	8.1	3.9	8.3
Totals, Disposition	**504.2**	**337.0**	**249.5**	**12.8**	**16.5**	**20.6**
Carryover, July 31, 1968	665.5	77.0	130.9	7.5	4.7	9.9
Crop Year 1968-69						
Carryover, Aug. 1, 1968	665.5	77.0	130.9	7.5	4.7	9.9
Production in 1968	649.8	362.5	325.4	13.0	19.7	19.4
Imports	—	—	—	—	[1]	—
Totals, Supply	**1,315.4**	**439.5**	**456.3**	**20.5**	**24.3**	**29.3**
Exports[2]	305.8	2.7	26.4	4.2	13.4	14.3
Domestic use[3]	157.7	308.1	230.5	7.6	6.0	9.9
Totals, Disposition	**463.5**	**310.8**	**256.9**	**11.8**	**19.4**	**24.3**
Carryover, July 31, 1969	851.8	128.7	199.4	8.7	4.9	5.1

[1] Fewer than 50,000 bu. [2] Includes seed wheat, wheat flour in terms of wheat; seed oats, rolled oats a oatmeal in terms of oats; and malt in terms of barley. [3] Includes human food, seed requirements, industr use, loss in handling and animal feed.

34.—Production, Imports, Exports and Domestic Use of Wheat, Crop Years Ended July 31, 1965-69

(Millions of bushels)

Item	1964-65	1965-66	1966-67	1967-68	1968-69
arryover, Aug. 1	459.4	513.0	420.1	576.8	665.5
roduction	600.7	649.4	827.3	592.9	649.8
nports	[1]	[1]	[1]	—	—
Totals, Supply	**1,060.2**	**1,162.4**	**1,247.5**	**1,169.7**	**1,315.4**
xports[2]	399.6	584.9	515.3	336.0	305.8
omestic use	147.6	157.4	155.4	168.2	157.7
Totals, Disposition	**547.2**	**742.3**	**670.7**	**504.2**	**463.5**
arryover, July 31	513.0	420.1	576.8	665.5	851.8

[1] Fewer than 50,000 bu. [2] Includes seed wheat and wheat flour in terms of wheat.

Miscellaneous Grain Trade Statistics

Grain Handled at Eastern Elevators.—Total receipts of the six major grains at astern elevators in the 1968-69 crop year amounted to 270,219,000 bu., 5 p.c. more than n the previous crop year. Shipments, amounting to 245,906,000 bu., were down 11 p.c. rom the 1967-68 level of 275,190,000 bu.

35.—Canadian Grain Handled at Eastern Elevators, Crop Years Ended July 31, 1965-69

Item and Crop Year	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed	Total Grain
	bu.	bu.	bu.	bu.	bu.	bu.	bu.
eceipts—							
1964-65	332,054,894	34,679,472	26,523,625	1,846,451	5,911,068	66,799	401,082,309
1965-66	440,515,042	36,369,468	36,727,865	3,590,874	6,341,684	196,514	523,741,447
1966-67	402,638,556	34,803,584	42,994,922	3,627,532	5,609,823	479,835	490,154,252
1967-68	191,627,275	29,229,428	30,053,168	2,457,441	4,582,264	255,197	258,204,773
1968-69	213,824,847	19,866,603	30,331,129	1,113,240	4,665,247	417,482	270,218,548
hipments—							
1964-65	292,152,053	33,899,769	26,520,419	1,641,919	6,174,167	66,799	360,455,126
1965-66	464,113,311	35,130,369	35,506,689	3,489,923	6,057,491	196,514	544,494,297
1966-67	379,129,920	35,713,589	43,463,558	3,688,086	5,298,936	479,669	467,773,758
1967-68	206,975,805	29,543,851	30,873,957	2,819,070	4,771,788	205,219	275,189,690
1968-69	188,251,551	20,389,413	30,359,559	1,145,481	5,363,779	396,235	245,906,018

Lake Shipments of Grain.—The 1969 navigation season opened at the Canadian akehead on Apr. 11 and closed on Dec. 23. During the season, shipments of wheat, ats, barley, rye, flaxseed, rapeseed and mustard seed totalled 263,921,000 bu., an increase f 6 p.c. over the 247,978,000 bu. shipped during the 1968 navigation season which opened n Apr. 10 and closed on Dec. 19.

36.—Lake Shipments of Canadian Grain from Thunder Bay, Navigation Seasons 1968 and 1969

Grain	1968				1969			
	To Canadian Ports	To U.S. Ports	To Overseas Ports	Total Shipments	To Canadian Ports	To U.S. Ports	To Overseas Ports	Total Shipments
	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.
heat	176,505,731	—	8,784,926	185,290,657	169,419,677	558,780	2,201,622	172,180,079
ats	20,293,917	—	801,463	21,095,380	20,444,743	—	515,492	20,960,235
arley	24,575,033	5,834,786	1,048,057	31,457,876	48,148,757	7,043,966	1,941,902	57,134,625
ye	987,505	630,093	1,443,829	3,061,427	1,295,959	529,264	266,843	2,092,066
laxseed	2,405,111	—	3,312,621	5,717,732	6,685,229	—	2,061,964	8,747,193
apeseed	531,432	—	90,408	621,840	890,344	—	1,281,998	2,172,342
ustard seed	—	—	733,377	733,377	—	—	634,790	634,790
Totals	**225,298,729**	**6,464,879**	**16,214,681**	**247,978,289**	**246,884,709**	**8,132,010**	**8,904,611**	**263,921,330**

Licensed Grain Storage.—Total grain storage capacity in Canada, licensed under the provisions of the Canada Grain Act by the Board of Grain Commissioners for Canada, amounted to 700,349,000 bu. at Dec. 1, 1968, the increase over the same date of 1967 being 6,975,000 bu. Greater capacity in Western country elevators and Pacific Coast elevators more than offset decreases in interior private and mill, and Georgian Bay and upper Lake ports. Table 37 gives the amount in storage at three dates during the year. On July 31, 1969, 77.3 p.c. of the licensed storage capacity was occupied as compared with 70.8 p.c. on the same date of 1968.

37.—Licensed Grain Storage Capacity and Grain in Store, Crop Years 1967-68 and 1968-69

Crop Year and Storage Position	Licensed Storage Capacity	Canadian Grain[1] in Licensed Storage			Proportion of Licensed Storage Capacity Occupied		
	Dec. 1, 1967	Nov. 29, 1967	Apr. 3, 1968	July 31, 1968	Nov. 29, 1967	Apr. 3, 1968	July 31, 1968
1967-68	'000 bu.	'000 bu.	'000 bu.	'000 bu.	p.c.	p.c.	p.c.
Western country	390,701	283,976	308,827	315,901	72.7	79.0	80.9
Interior private and mill	14,578	6,889	6,917	6,106	47.3	47.4	41.9
Interior terminals	17,100	15,487	15,609	16,601	90.6	91.3	97.0
Pacific Coast	24,846	16,793	13,235	15,079	67.6	53.3	60.7
Churchill	5,000	4,581	4,581	4,202	59.2	91.6	84.0
Thunder Bay	107,321	63,525	95,381	80,332	59.2	88.9	74.9
Georgian Bay and upper Lake ports	36,566	33,272	19,396	20,258	91.0	53.0	55.4
Lower Lake and upper St. Lawrence ports	19,100	13,532	11,000	7,703	70.8	57.6	40.3
Lower St. Lawrence ports	69,932	42,645	32,294	20,833	61.0	46.2	29.8
Maritime ports (excl. Newfoundland)	8,229	7,148	2,276	4,095	86.9	27.7	49.8
Totals, 1967-68	**693,374**	**487,848**	**509,516**	**491,110**	**70.4**	**73.5**	**70.8**
	Dec. 1, 1968	Nov. 27, 1968	Apr. 2, 1969	July 31, 1969	Nov. 27, 1968	Apr. 2, 1969	July 31, 1969
1968-69	'000 bu.	'000 bu.	'000 bu.	'000 bu.	p.c.	p.c.	p.c.
Western country	394,279	312,356	314,341	351,710	79.2	79.7	89.2
Interior private and mill	14,403	6,210	6,012	5,881	43.1	41.7	40.8
Interior terminals	17,100	15,796	9,274	14,178	92.4	54.2	82.9
Pacific Coast	29,668	14,848	18,707	15,971	50.0	63.1	53.8
Churchill	5,000	4,639	4,739	4,548	92.8	94.8	91.0
Thunder Bay	107,321	44,931	69,815	72,105	41.9	65.1	67.2
Georgian Bay and upper Lake ports	35,316	28,531	14,469	25,898	80.8	41.0	73.3
Lower Lake and upper St. Lawrence ports	19,100	10,700	7,273	10,193	56.0	38.1	53.4
Lower St. Lawrence ports	69,932	39,565	27,720	35,544	56.6	39.6	50.8
Maritime ports (excl. Newfoundland)	8,229	6,055	1,842	5,594	73.6	22.4	68.0
Totals, 1968-69	**700,349**	**483,631**	**474,192**	**541,622**	**69.1**	**67.7**	**77.3**

[1] Wheat, oats, barley, rye, flaxseed and rapeseed.

Production and Exports of Wheat Flour.—Production of wheat flour in the 1968-69 crop year amounted to 37,621,000 cwt. and wheat milled for flour totalled 85,049,000 bu., the figures being little changed from those for 1967-68. Of the wheat milled for flour, approximately 71,010,000 bu. were Western Canadian spring wheat (other than Durum) and the remainder was made up of 8,309,000 bu. of Ontario winter wheat, 4,572,000 bu. of Durum wheat and 1,158,000 bu. of other types. Utilization of milling capacity, based on a daily operating potential of some 174,000 cwt., averaged 73.9 p.c. in 1968-69 compared with 80.2 p.c. in the previous year. Exports of wheat flour in 1968-69 amounted to 10,705,000 cwt. compared with 10,735,000 cwt. exported in 1967-68.

38.—Wheat Milled for Flour, and Production and Exports of Wheat Flour, Five-Year Averages 1945-65 and Crop Years Ended July 31, 1966-69

Crop Year	Wheat Milled for Flour	Wheat Flour Production	Wheat Flour Exports	
			Amount	P.C. of Production
	'000 bu.	cwt.	cwt.	
Av. 1945-46—1949-50	107,330	47,011,540	25,819,721	54.9
Av. 1950-51—1954-55	100,446	43,847,894	21,812,041	49.7
Av. 1955-56—1959-60	90,148	39,752,589	16,349,155	41.1
Av. 1960-61—1964-65	91,128	40,834,088	15,769,805	38.6
1965-66	97,926	43,531,263	16,576,117	38.1
1966-67	90,085	39,978,571	13,848,208	34.6
1967-68	84,769	37,755,841	10,734,857	28.4
1968-69	85,049	37,621,151	10,705,452	28.5

Subsection 2.—Livestock Marketings*

The main feature of the livestock market in 1969 was the rise in prices in all departments of the trade to produce an all-time record value of commercial marketings at $1,422,000,000, an increase of 10 p.c. in sales revenue over the previous year. Reduced production, heavier weights and somewhat better quality contributed to the rise in prices and strong domestic demand ensured good weekly clearances despite limited export trade.

Marketings of cattle sold through public stockyards, shipped directly to packing plants, in export and to country points in another province numbered 3,330,729 head, down 4 p.c. from the total of the previous year. All western provinces contributed to the decline, British Columbia and Saskatchewan showing the sharpest reductions at 14.6 p.c. and 14.3 p.c., respectively. On the other hand, all eastern provinces except Newfoundland had heavier marketings, Quebec recording the greatest increase at 20 p.c. Calf marketings followed a similar pattern. The volume of sales at 1,206,685 head was 10.4 p.c. lower than in the previous year and the lowest in the previous five years, with Quebec establishing an all-time record output of 415,867 head. Cattle slaughtered in federally inspected establishments averaged 566 lb. per carcass, more than 6 lb. heavier than the 1968 average; 62.5 p.c. graded choice and good quality compared with 56.8 p.c. in the previous year, representing the best quality turnout since the inception of official beef grading. Prices for all classes and grades of cattle at $26.65 averaged $3.45 per cwt. higher than in 1968; choice steers and heifers rose $2.45 and $2.25, respectively, with corresponding gains in lower grades of both classes. Throughout the year demand was keen for fed cattle which, coupled with an abundance of feed grain available in Western Canada, resulted in a strong market on all classes of replacements. Good feeder steers at $31.20 showed an increase of $4.50 over 1968, and good stock steer calves, which made up 24.5 p.c. of total calves marketed through public stockyards, at $37.55 were $7.55 above the 1968 price. Prices for veal and butcher calves were also sharply higher—$4.00 to $5.00 above the previous five-year averages—with supplies usually not sufficient to meet the demand.

Marketings of hogs in 1969 at 7,481,479 were 8 p.c. lower than in 1968. Of the western provinces, only Manitoba showed an increase in production with 3.5 p.c. over the previous year, and Alberta had the sharpest reduction at 16.6 p.c.; all Atlantic Provinces recorded minor increases but production in both Ontario and Quebec also declined. There was a complete change in hog classification in 1969, so that quality figures for that year given in

* More detailed information is available from DBS annual report *Livestock and Animal Products Statistics* (Catalogue No. 23-203), and the Canada Department of Agriculture publication *Livestock Market Review*. Statistics of livestock and poultry production and disappearance are given on pp. 582-585.

Table 39 cannot be compared with those of previous years; however, indications are tha it was at least equal to that of 1968. Manitoba had the lowest quality grading and th Atlantic Provinces, following the pattern of recent years, produced the highest percentag in the top grades. The average price for hogs with an Index of 100 was $35.20 in 1969, a increase of $6.40 per cwt., and the value per carcass was correspondingly higher at $57.4 compared with $46.35 in 1968.

Sheep and lambs shipped to public stockyards, packing plants and on export durin 1969 totalled 267,098, a reduction of 19.3 p.c. from the previous year, the lowest eve reached since collection of these statistics was begun in 1920. Although quality remaine relatively equal to the previous year's grading and the average price of good lambs wa $30.45 compared with $26.85 in the previous year, prospects for improvement in the shee and lamb trade are not indicated.

39.—Livestock Marketed at Stockyards and Packing Plants, by Grade, 1965-69

Livestock	1965	1966	1967	1968	1969
	No.	No.	No.	No.	No.
Cattle	**3,412,043**	**3,318,109**	**3,199,171**	**3,328,888**	**3,231,754**
Steers—[1]					
Choice	716,082	760,416	746,825	790,792	883,601
Good	292,940	308,920	331,212	350,426	328,874
Medium	208,793	173,325	180,448	172,618	140,064
Common	93,732	54,720	51,924	56,657	47,630
Heifers—[1]					
Choice	167,166	195,352	215,474	242,073	304,311
Good	169,994	183,809	188,171	227,147	225,108
Medium	160,974	141,458	136,145	137,374	93,146
Common	90,286	62,514	54,969	58,402	37,191
Cows	845,352	823,093	708,869	737,182	636,058
Bulls	78,977	67,808	60,758	64,249	61,863
Feeder steers	435,847	393,315	376,611	353,191	348,369
Stock and feeder cows and heifers	151,900	153,379	147,765	138,777	125,539
Calves	**1,182,623**	**1,106,616**	**1,109,565**	**1,025,857**	**888,861**
Choice and Good—					
Veal	208,543	232,991	193,650	152,047	148,483
Butcher	53,466	40,870	45,382	38,519	20,315
Medium and Common—					
All weights	565,252	442,623	472,240	470,600	421,429
Stock	355,362	390,132	398,293	364,691	298,634
Hog Carcass Gradings	**7,077,126**	**6,860,030**	**8,186,356**	**8,145,147**	**7,481,479**
"A"	2,814,675	2,792,351	3,331,351	3,388,214	138,035[2]
"B"	3,065,538	2,917,008	3,434,215	3,394,608	3,040,930[2]
"C"	469,325	425,598	508,853	506,177	1,264,929[2]
"D"	35,406	26,024	34,076	39,712	2,157,260[2]
Light	154,264	112,744	150,702	159,484	134,970[2]
Heavy	199,619	257,791	300,621	269,421	488,132
Extra heavy	67,321	81,811	100,241	84,893	..
"E"[3]	50,084	49,085	58,137	54,142	45,171
Sows	220,894	197,618	268,160	248,496	212,052
Lambs and Sheep Graded Alive	**59,248**	**53,573**	**73,695**	**69,005**	**67,144**
Lamb and Sheep Carcass Gradings	**359,328**	**285,774**	**275,076**	**240,282**	**179,637**

[1] Includes fed calves. [2] Under the new classification (see text above) quality "A"=Indexes 112, 109-110; "B"=Indexes 105-107, 102-103; "C"=Index 100; "D"=Indexes 97-98, 92-95, 88; Light=Light and 80. [3] Includes injured hogs, ridgelings and stags.

40.—Livestock Marketed at Public Stockyards, Packing Plants and Direct for Export, by Province, 1969

Livestock	Atlantic Provinces	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
	No.	No.	No.	No.	No.	No.	No.	No.
attle	**36,151**	**141,564**	**997,920**	**298,667**	**542,678**	**1,240,074**	**73,675**	**3,330,729**
Totals to stockyards	2,269	68,075	444,753	159,343	269,672	545,994	9,110	1,499,216
Direct to packers	29,668	69,870	513,255	137,485	247,774	684,078	50,408	1,732,538
Direct for export	3,715	3,619	39,779	383	1,484	5,201	7,683	61,864
Country points in other provinces[1]	499	—	133	1,456	23,748	4,801	6,474	37,111
alves	**10,712**	**415,867**	**214,921**	**93,697**	**221,643**	**220,167**	**29,678**	**1,206,685**
Totals to stockyards	4,706	81,508	100,486	77,026	98,950	148,939	4,195	515,810
Direct to packers	4,299	240,285	91,644	9,815	8,285	14,397	4,326	373,051
Direct for export	477	93,991	22,693	325	545	476	207	118,714
Country points in other provinces[1]	1,230	83	98	6,531	113,863	56,355	20,950	199,110
ogs	**318,647**	**1,717,929**	**2,655,881**	**777,708**	**553,782**	**1,415,526**	**52,753**	**7,492,226**
Totals to stockyards	6	6,545	418,399	201,230	18,382	71,482	28	716,072
Direct to packers	317,964	1,711,383	2,233,747	570,380	535,236	1,344,042	52,655	6,765,407
Direct for export	677	1	3,735	6,098	164	2	70	10,747
heep and Lambs	**11,884**	**24,975**	**94,424**	**9,992**	**31,015**	**89,476**	**18,390**	**280,156**
Totals to stockyards	1,548	5,298	70,755	5,821	6,896	21,245	812	112,375
Direct to packers	9,845	19,676	23,506	3,622	16,956	44,134	16,667	134,406
Direct for export	281	1	163	82	1,309	18,471	10	20,317
Country points in other provinces[1]	210	—	—	467	5,854	5,626	901	13,058
otal Inward Movement[2]								
Cattle	243	1,116	126,127	58,208	81,828	226,214	733	494,469
Calves	—	1,427	309,118	10,445	33,239	121,088	741	476,058
Sheep and lambs	455	222	12,998	1,729	382	9,674	145	25,605

[1] Livestock billed through stockyards to country points outside province of origin. [2] Movement to rms from stockyards and plants, and shipments on through-billings from country points in one province to country ints in another province.

Section 3.—Co-operative Organizations*

Business volume of co-operatives dropped during 1968 with the slowdown of Canadian heat exports. Total revenue of 2,469 local co-operatives amounted to $2,132,900,000, decline of $47,000,000 or 2 p.c. from 1967, and included farm product marketings ,332,700,000, sale of merchandise and supplies $720,100,000, service revenue (trucking, old storage, grazing, etc.) $66,100,000 and miscellaneous income (rent, interest, dividends, c.) $14,100,000. Total assets of the co-operatives amounted to $1,177,200,000 and embers' equity therein was 45 p.c. Continuing the trend toward consolidation of units, e number of associations declined during the year to 2,469 while reported membership se by 35,000 to 1,723,000. Marketing and purchasing co-operatives, which market embers' produce and retail merchandise and supplies to members, have always been the ominant types of co-operatives and have for many years accounted for more than 90 p.c. co-operatives' business volume, with service and fishermen's co-operatives contributing e remainder.

Total revenues of marketing and purchasing co-operatives at $2,039,900,000 eased by 51,000,000 or 2 p.c. in 1968, due to a decline in western grain marketings which more than fset gains in most other revenue items. Total revenues consisted of: farm product market- gs, $1,285,600,000; retailing of merchandise and supplies, $715,000,000; service revenue, 7,100,000; and miscellaneous income, $12,200,000. Farm product marketings declined $87,000,000 or 6 p.c., with a sharp decline of $104,000,000 or 19 p.c. in Prairie grain arketings far outweighing a modest aggregate gain of $17,000,000 in marketings of other rm products. Livestock marketings were down slightly due to a substantial decline in

* Prepared in the Economics Branch, Canada Department of Agriculture, Ottawa.

Ontario, while a mixture of higher poultry meat prices and lower egg prices resulted in negligible over-all gain of less than 1 p.c. in co-operative marketings of these products i 1968. Co-operative dairy marketings rose 3 p.c. to $344,000,000, although Canadia dairy production and producer returns were almost unchanged during the year. Fru and vegetable marketings rose 6 p.c. to $51,000,000 based on a combination of record appl production and good prices for the crop year 1967-68. Wool and miscellaneous marketing declined but honey and tobacco registered increases. Sales of merchandise and supplie by co-operatives were up a modest 5 p.c. in 1968 as compared to a jump of 12 p.c. in th previous year. Machinery sales were down in the Prairie Provinces and feed sales slippe in Ontario where a bumper grain crop lessened purchases of western feed grains. All othe sales categories rose including food products and petroleum which posted their usual stead gains while the growth rate of fertilizer levelled off somewhat as compared to the precedin four-year period in which sales more than doubled. Assets of the marketing and purchasin co-operatives recorded a huge increase of $154,000,000 or 18 p.c., attributable mainly t the accumulation of Prairie grain inventories, a stepped-up program of modernization an expansion of facilities by the wheat pools, and a rationalization of the dairy industry i Quebec involving the consolidation of plants into a smaller number of larger, more efficien units. Three quarters of the increase in assets were financed by liabilities to the publi almost all of it in the form of short-term loans.

Service co-operatives provide services to their members such as trucking, cold storag grazing, medical insurance, rural electrification, etc., and, in conjunction with their mai function, some service co-operatives are engaged in the marketing of farm products an the sale of supplies. For 1968, total business volume of 1,071 service co-operatives with membership of 316,000 amounted to $65,100,000 and included service revenue of $38,427,000 sales of farm products and supplies of $24,971,000 and miscellaneous income of $1,727,000 Assets of the service co-operatives totalled $129,709,000 at year-end of which member equity represented 62 p.c. Fishermen's co-operatives, of which there were 86 reportin for 1968 with membership of 8,000, had a total business volume of $28,302,000, includin fish marketings of $24,220,000, fishing and other supplies of $3,191,000, and service revenu and other income of $891,000. Assets amounted to $17,600,000.

Wholesale co-operatives are federations of local co-operatives which act as centra marketing agencies and distributors for the farm products and supplies of the local co operatives. Their sales are reported separately from those of the local co-operatives, sinc they are largely a duplication of the sales made by the locals. Sales volume of the eigh co-operative wholesales for 1968 was $560,200,000, a modest increase of $18,000,000 or 3 p.c over the previous year. Supply sales came to $363,100,000, of which the largest items wer food products $106,000,000, feed $80,800,000, and petroleum $63,900,000. Marketing o farm products totalled $197,100,000 including livestock $88,200,000 and dairy product $52,200,000. Assets for the eight wholesales and one wholesaler for the other wholesale amounted to $213,700,000 at year-end 1968.

The first Eskimo co-operative in Canada was incorporated in 1959. Twenty-seve co-operatives and two credit unions have since been formed in the Northwest Territories with another nine co-operatives and a caisse populaire in northern Quebec. Primarily production organizations, they have helped to preserve and to promote native arts an crafts, and are now engaged in a multiplicity of activities. Their combined trading figur in 1968 approximated $2,500,000 and their assets were valued at $2,136,000, of which members held a 42-p.c. equity built up within ten years from literally nothing. Over the same period an additional $5,000,000 was earned by members in wages and by marketing their products through co-operatives. These amounts probably represent a more substantial return to local people than that generated by any other business organization in the North. The transfer of the responsibility for the co-operative development program from the Federal Government in Ottawa to the Northwest Territories Government in Yellowknife in 1969 brought supervisory and advisory services much closer to the co-operatives in the Territories. Since 1967, co-operatives in northern Quebec have been serviced through their own federation, which was formed in that year.

.—Summary Statistics of Co-operative Marketing and Purchasing Associations, 1964-68 and by Province, 1967 and 1968

Year and Province	Associations	Shareholders or Members	Sales of Products	Sales of Merchandise	Total Business[1]
	No.	No.	$'000	$'000	$'000
64	1,546	1,305,000	1,234,000	522,800	1,780,600
65	1,495	1,307,000	1,201,700	549,400	1,774,600
66	1,420	1,329,000	1,238,600	609,500	1,882,900
67	1,357	1,363,374	1,372,842	681,356	2,090,976
68	1,312	1,399,000	1,285,600	715,000	2,039,900
Province					
wfoundland 1967	38	9,448	414	7,538	7,999
1968	36	10,000	200	9,000	9,200
ince Edward Island 1967	15	9,672	4,546	7,348	12,031
1968	18	10,000	4,300	8,300	12,800
va Scotia 1967	82	30,811	30,704	21,718	53,088
1968	83	32,000	33,400	24,700	59,000
w Brunswick 1967	49	16,399	14,251	15,662	30,332
1968	47	16,000	12,700	16,900	30,100
ebec 1967	401	84,949	183,032	151,739	340,522
1968	397	105,000	185,900	166,200	357,500
tario 1967	156	105,122	110,860	110,476	225,208
1968	147	108,000	106,500	108,900	220,100
nitoba 1967	96	190,579	57,019	51,379	120,392
1968	91	186,000	51,000	58,000	120,300
katchewan 1967	282	447,111	478,065	143,876	631,583
1968	271	459,000	421,900	145,800	578,800
berta 1967	141	276,510	268,355	89,963	360,652
1968	131	276,000	253,700	95,400	351,800
tish Columbia 1967	92	55,271	92,173	48,325	141,834
1968	86	56,000	97,800	51,100	150,500
erprovincial 1967	5	137,502	133,423	33,332	167,335
1968	5	141,000	118,200	30,700	149,800

[1] Includes other revenue.

42.—Products Handled by Marketing and Purchasing Co-operatives, 1966-68

Product	Value of Sales		
	1966	1967	1968
	$'000	$'000	$'000
rketing	**1,238,600**	**1,372,842**	**1,285,600**
Dairy products	306,900	332,610	343,900
Fruits and vegetables	42,400	47,877	50,600
Grains and seeds	587,000	672,303	573,500
Livestock and livestock products	230,900[r]	248,902	246,900
Eggs and poultry	57,500[r]	57,200	57,500
Honey	5,200	3,616	4,900
Tobacco	700	1,485	1,700
Wool	1,300	1,105	1,000
Miscellaneous	6,700	7,744	5,600
rchasing	**609,500**	**681,356**	**715,000**
Food products	166,900	189,472	208,100
Clothing and home furnishings	21,500	21,924	23,300
Hardware	41,500	50,011	52,500
Petroleum products	94,600	99,277	106,900
Feed	142,200	153,307	150,000
Fertilizer and spray material	39,900	55,276	56,900
Machinery and equipment	38,300	40,131	39,600
Building material	35,400	37,230	40,600
Miscellaneous	29,200	34,728	37,100
Totals	**1,848,100**	**2,054,198**	**2,000,600**

PART II.—GOVERNMENT AIDS TO AND CONTROL OF DOMESTIC TRADE

Section 1.—Controls Affecting the Marketing of Farm Products

Subsection 1.—Control of the Grain Trade

The agencies exercising control of the grain trade in Canada include the Board o Grain Commissioners for Canada which, since 1912, has administered the provisions o the Canada Grain Act, and the Canadian Wheat Board which operates under the Canadia Wheat Board Act, 1935.

The Board of Grain Commissioners for Canada.—The Board of Grain Commis sioners was established in 1912 under the authority of the Canada Grain Act, 1912 (RS 1952, cc. 25 and 308 and amendments). It is a quasi-judicial and administrative body o three—a chief commissioner and two commissioners—reporting to the Minister of Agr culture.

The Canada Grain Act has been called the Magna Charta of the Canadian grai trade or, more particularly, of the Canadian farmer, and the Board's chief duties are t ensure that the rights conferred on the different parties by the provisions of the Act ar properly protected. Transportation of grain is restricted except from or to licensed ele vators, and restriction is placed on the use of established grade names. The Act does no provide for any control or supervision of grain exchanges and the Board of Grain Com missioners has no power or duties in the matter of grain prices.

The Board manages and operates, under semi-public terminal licences, the Canadia Government elevators situated at Moose Jaw and Saskatoon, Sask., Lethbridge, Edmonto and Calgary, Alta., and Prince Rupert, B.C. The Executive Offices of the Board an other principal offices are situated at Winnipeg, Man., but branch offices are maintained a numerous points from Montreal in the east to Victoria in the west. Total personnel i approximately 1,000, including Canadian Government elevator staff.

On a fee basis, the Board provides official inspection, grading and weighing of grai and registration of warehouse receipts. All operators of elevators in Western Canad and of elevators in Eastern Canada that handle western-grown grain for export, as we as all parties operating as grain commission merchants, track buyers of grain, or as grai dealers, are required to be licensed by the Board annually and to file security by bon or otherwise as a guarantee for the performance of all obligations imposed upon them b the Canada Grain Act or by the regulations of the Board.

To protect the rights of the different parties, the Board has jurisdiction to inquir into and is empowered to give direction regarding any matter relating to the grading o weighing of grain; deductions made from grain for dockage; shortages on delivery of grai into or out of elevators; unfair or discriminatory operation of any elevator; refusal o neglect of any person to comply with any provision of the Canada Grain Act; and an other matter arising out of the performance of the duties of the Board.

In the Prairie Provinces, the Board maintains four assistant commissioners—one i Alberta, two in Saskatchewan and one in Manitoba. These assistant commissioner investigate complaints of producers and inspect periodically the country elevators in thei respective provinces; all elevators with their equipment and stocks of grain are subjec to inspection by officials of the Board at any time.

The Board sets up, annually, Committees on Grain Standards and also appoint Grain Appeal Tribunals to give final decisions in cases where appeals are made agains the grading of grain by the Board's inspection officials. To assist in maintaining th uniform quality of the top grades of Red Spring wheat handled through terminal elevators the Canada Grain Act provides that wheat of these grades shall be stored with grain o like grade only.

The Board's Research Laboratory, located at Winnipeg, is the main centre of research
the chemistry of Canadian grains. It is well staffed and equipped to provide the service
quired to help maintain and expand domestic and foreign markets for all types of grain.
he Laboratory collects and tests samples to obtain information on the quality of the
rious grain crops grown each year and on the quality of grain shipped. Basic research
also undertaken, the program being directed toward better understanding of what
nstitutes quality in cereal grains and toward improvement in the methods of assessing
ality.

In addition to its duties under the Canada Grain Act, certain other duties are per-
rmed by the Board. Under the provisions of the Inland Water Freight Rates Act (RSC
52, c. 153), the Board maintains records of rates for the carriage of grain from Thunder
y, Ont., by lake or river navigation and is empowered to prescribe maximum rates for
ch carriage. Under the provisions of the Prairie Farm Assistance Act (RSC 1952, c. 213
amended), the Board collects from licensees under the Canada Grain Act 1 p.c. of the
rchase price of wheat, oats, barley, rye, flaxseed and rapeseed purchased by such licensees.

The Canadian Wheat Board.—The Canadian Wheat Board was established under
e Canadian Wheat Board Act of 1935 for the purpose of "the marketing in an orderly
anner, in interprovincial and export trade, of grain grown in Canada" and now operates
der RSC 1952, c. 44 as amended. The Board accomplishes its objective through regula-
n and agreement. It owns no grain handling facilities but, by entering into agreements
th the owners of these facilities, it attempts to bring about an orderly flow of grain through
ch of the steps involved in merchandising the grain from the producer to the domestic
overseas buyer.

In the selling of wheat, the Board utilizes the services of shippers and exporters.
its sales operations, the Board endeavours to meet the wishes of overseas buyers and,
occasion, enters into direct contracts. When an exporter completes an export sale,
his capacity as an agent of the Board, he is responsible for the transaction; he completes
e transaction with the buyer and settles with the Board for the purchase of the wheat
m the Board.

When the commercial storage facilities are inadequate to handle all the grain pro-
ced, it is necessary for the Board to regulate the flow of grain from the producer to these
rward positions. The first step is accomplished by the use of producer's delivery permits
ued annually by the Canadian Wheat Board. Every delivery of grain made to country
vators by a producer is entered in his permit book. By regulating the amount of grain
livered by the producer to the country elevator by the use of a quota system and, by
portioning shipping orders to country elevators according to the needs created by sales
mmitments, the Wheat Board regulates the amount of grain coming into the marketing
annel.

The next step is the handling of the grain by the country elevator. The maximum
arges for the handling and storing of the grain are set by the Board of Grain Commis-
ners, but the actual charges are subject to negotiation between the elevator companies
d the Wheat Board.

The third step in the marketing process—transporting the grain from the country
vators to large terminal elevators in Eastern Canada, Churchill or on the West Coast—
carried out by the railways. The Wheat Board determines the kinds and grades of grain
at are required at the different terminal destinations to meet its sales commitments and
orms the elevator companies and the railways of these needs. The maximum tariffs are
by an agreement between the railways and the Government of Canada.

The fourth major step—storing and handling of the grain at terminal elevators—
done in privately or co-operatively owned elevators. Maximum charges are established
this service by the Board of Grain Commissioners.

In the case of oats and barley, the Board's operations are less extensive than those
ating to wheat. These two grains are sold in store positions at the terminal elevators

at Thunder Bay and Vancouver. Oats and barley are marketed either on a straight ca basis at prices quoted daily by the Board or on the basis of exchange of futures conclud through the facilities of the Winnipeg Grain Exchange. The Board controls the moveme of coarse grains to Thunder Bay. The private trade is responsible for the movement oats and barley from Thunder Bay or Vancouver positions.

The producer receives payment for his wheat, oats and barley in two or three stag An initial payment price is established early in the crop year by Order in Council. T initial payment price less the cost of handling grain at the local elevator and the tra portation costs to Thunder Bay or Vancouver is the initial price received by the produc This price is a guaranteed floor price in that if the Wheat Board, in selling the grain, d not realize this price and the necessary marketing costs, the deficit is borne by the Fede Treasury. However, with very few exceptions, the Wheat Board has operated witho financial aid from the Federal Treasury.

After the end of the crop year, but prior to the final payment being made, if the Wh Board can confidently foresee a surplus accumulating and if authorized by Order in Coun an interim payment is made to producers. This interim payment is the same amount p bushel to all producers of the same grade of grain. When the Board has sold all the gr or otherwise disposed of it in accordance with the Canadian Wheat Board Act, the Boa if authorized by Order in Council, makes a final payment to producers.

Under the Prairie Grain Advance Payments Act, administered by the Board, p ducers may receive, through their elevator agents, cash advances on farm-stored grain accordance with a prescribed formula. The purpose of this legislation is to make ca available to producers pending delivery of their grain under delivery quotas establish by the Board. Cash advances are interest-free as far as producers are concerned.

Western Canadian producers receive the price for their grain that the Wheat Boa receives, less its operating costs including carrying charge, and the general level of pri received by the Board is determined by competitive conditions in world markets. T only subsidy received by the farmer in the Canadian wheat marketing system is the pa payment of storage costs for wheat made by the Government of Canada. Under provisio of the Temporary Wheat Reserves Act, the Minister of Finance, out of the Consolidat Revenue Fund, pays to the Wheat Board the storage costs on wheat in storage at the e of the crop year in excess of 178,000,000 bu.

Subsection 2.—Controls Over Farm Products Other Than Grain*

The Government of Canada and provincial governments have, through legislati and in other ways, given marketing aids such as those related to research, educatio information, inspection, grading and many other service measures of this type, design to assist in making adjustments in marketing within agriculture and between agricultu and the remainder of the economy. Closely related is regulatory action designed to prote the consumer.

Producers have been concerned about another type of market control, namely th which will give either their organizations or a government agency influence over the pri received. In a highly specialized commercial agriculture such as Canada now has, t producer is dependent on the price of his product for his livelihood. Canadian farme have long attempted to obtain some measure of market control through voluntary orga zations, mainly marketing co-operatives. All provinces have made provision for t incorporation of such co-operatives and most, if not all, have provided other assistan to them. In the federal field, the Agricultural Products Co-operative Marketing A encourages marketing under a co-operative plan.

Other legislation provides for legal control over the marketing of agricultural product either by a producer board or a government agency. Legislation of this type includ

* Prepared in the Economics Branch, Canada Department of Agriculture, Ottawa.

nat pertaining to milk control boards, to producer marketing boards and to industry narketing commissions. Measures pertaining to grain marketing have been reviewed in ubsection 1, pp. 1036-1038, and the Agricultural Stabilization Act, which provides price ipport for certain key products is discussed in the Agriculture Chapter, pp. 557-558.

Product Controls.—The federal and provincial departments of agriculture co-operate n establishing and enforcing grades of quality standards for various foods. Some control ver size and type of containers used for distribution of agricultural products is exercised y the Canada Department of Agriculture and the Department of Consumer and Corporate ffairs enforces regulations pertaining to weights and measures (see p. 1050).

Controls related to health and sanitation in food handling are developed and enforced t all three levels of government—municipal, provincial and federal. Examples of pro- incial and municipal action include laws pertaining to the pasteurization of milk, inspection f slaughter-houses and sanitary standards in restaurants. At the federal level, inspection y the Health of Animals Branch of the Department of Agriculture of all meat carcasses nat enter into interprovincial trade is required. The Food and Drug Directorate of the Department of National Health and Welfare has wide control over the composition of oods and over misleading advertising of foods and drugs.

Marketing Controls.—*The Agricultural Products Co-operative Marketing Act.*— n the late 1930s, the Federal Government decided to assist orderly marketing by encourag- ig the establishment of pools which would give to the producer the maximum sales return or his product, less a maximum margin for handling expenses agreed upon in advance. Thus, the Agricultural Products Co-operative Marketing Act and the Wheat Co-operative Marketing Act were passed in 1939. The latter was used in one year only but the Agri- ultural Products Co-operative Marketing Act, which covers the marketing of all agricultural roducts, except wheat produced in the Canadian Wheat Board area, has served agricultural roducers continuously since 1939.

The purpose of this Act is to aid farmers in pooling the returns from sale of their products y guaranteeing initial payments and thus assisting in the orderly marketing of the product. he Government may undertake to guarantee a certain minimum initial payment to the roducer at the time of delivery of the product, including a margin for handling; sales eturns are made to the producer on a co-operative plan. The guaranteed initial payment ay be up to a maximum of 80 p.c. of the average price paid to producers for the previous ree years, the exact percentage to be recommended by the Minister of Agriculture who nters into an agreement with the selling agency for the product. During 1969, agreements ere made for the marketing of apples for processing in Quebec and beans in Ontario.

Milk-Control Legislation.—Most of the provinces enacted milk-control legislation prior o 1940. Most provinces finance these milk-control agencies partly from public funds and artly through the collection of licence fees and assessments from those engaged in the uid milk industry. The Ontario board is now financed wholly through licence fees. Milk-control agencies have the authority to license those engaged in the fluid milk industry nd can revoke licences for failure to conform with the orders of the milk-control board.

In all provinces with such boards, the milk-control board or similar agency sets the inimum price which distributors in specified markets may pay producers for Class I milk, nat is, milk actually sold for fresh fluid consumption. In British Columbia, a formula is sed as a guide in determining minimum prices to producers. Most provinces set either inimum or maximum wholesale and retail prices for fluid milk. Quebec sets a minimum nd maximum price range. Saskatchewan sets minimum prices applicable to all retail ilk sales and maximum prices applicable to milk sales from retail wagons, as well as a inimum-maximum price range at the wholesale level. Minimum prices are in effect in lberta, Nova Scotia and New Brunswick. Maximum prices are set in Manitoba and no

control is exercised over milk prices at the wholesale and retail levels in Ontario and Britis Columbia. In these three provinces some degree of price competition has develope between store sales and home delivery.

The powers given to or requirements made by milk-control boards include: (1) autho ity to inquire into all matters pertaining to the fluid milk industry, to define market area to arbitrate disputes, to examine the books and records of those engaged in the industry, t issue and revoke licences, and to establish a price for milk; and (2) authority to require bond from distributors, periodic reports from distributors, payments to be made to pro ducers by a certain date each month, distributors to give statements to suppliers, distrib utors to give notice before ceasing to accept milk from any producer, and producers to giv notice before ceasing to deliver milk to any distributor.

The Ontario Milk Marketing Board, a producer-controlled agency, was officiall established by the Milk Commission of Ontario on Nov. 1, 1965. The Board was delegate certain powers by the Commission in respect to the production, marketing and transporta tion of milk and has the power to set the price that milk distributors must pay to thei suppliers.

The Canadian Dairy Commission.—The Canadian Dairy Commission was establishe by Federal legislation and commenced operations on Apr. 1, 1967. This is a new departur in the area of agricultural marketing because it is the first national marketing board to b established since the Canadian Wheat Board was created in 1935. The Commission ha the power to purchase any dairy product and package, process, store, ship, insure, import export, or sell or otherwise dispose of any dairy product purchased by it. The Commissio may also make payments to producers of milk and cream for the purpose of stabilizing th price of these products.

The objects of the Commission are to provide producers of milk and cream with th opportunity of obtaining a fair return for their labour and investment, and to provid consumers with a continuous and adequate supply of high-quality dairy products. Th Federal Government, through the Canadian Dairy Commission, supports the income o manufacturing milk and cream producers by means of "offer-to-purchase" programs fo certain dairy products and direct subsidy payments.

In the 1967-68 dairy support year, the Federal Government introduced a global subsidy eligibility quota which was directly related to the domestic consumption of milk markete by manufacturing milk and cream shippers. Individual quotas were allocated on the basi of the shipper's deliveries during the previous dairy support year, with certain exceptions. The quota policy, with slight modifications, remained in effect through the dairy support years 1968-69 and 1969-70.

Producer Marketing Boards.—During the 1930s strong support developed for legislatio whereby agricultural producers could exercise legal authority under certain conditions t control the marketing of their produce. The Natural Products Marketing Act of 1934 attempted to provide this power at the federal level but proved *ultra vires*. The Natural Products Marketing (British Columbia) Act, 1936 was *intra vires* of provincial government powers and provided the model from which marketing board legislation has evolved in all 10 provinces.

While marketing board legislation has been revised from time to time on the basis of experience and there are variations in detail from province to province, the same basic powers are given to producers in all provinces. These powers include authority for a duly constituted producer board to control the marketing of 100 p.c. of a specified commodity produced in a designated area. A producer board, in at least some provinces, may set production quotas for each farmer. One producer board may control the marketing of several related commodities and the designated area may be either the whole or part of a province. A producer vote is usually required to establish a producer marketing board whose powers are delegated either by a provincial marketing board, which has certain supervisory authority, or by the Lieutenant-Governor in Council.

The powers of a producer marketing board provided by provincial legislation are necesrily limited to intraprovincial trade. Under the Agricultural Products Marketing Act, ıe Federal Government may delegate to a marketing board with respect to interprovincial ıd export trade similar powers to those obtained with respect to intraprovincial trade ıder provincial authority. This Act also gives the Governor in Council the right to ıthorize a provincial marketing board to impose and collect levies from persons engaged in ıe production and marketing of commodities controlled by it for the purposes of the board, ıe creation of reserves and the equalization of returns.

In 1968, there were 119 producer marketing boards operating in Canada, including the anadian Wheat Board which was established at the federal level. All of the provinces :cept Newfoundland had one or more boards established under their jurisdictions, with uebec accounting for 64 and Ontario 22. It is estimated that approximately 46 p.c. of 968 farm cash income was received from sales made under the control of producer market-g boards. Commodities sold through the boards included wheat, hogs, milk for factory-ade dairy products, fruits, potatoes and other vegetables, tobacco, poultry, wool, soy-eans, honey, maple products and pulpwood. As at Nov. 1, 1968, 55 of the provincial oards had received an extension of powers for purposes of interprovincial and export trade om the Federal Government; six boards had received authority with regard to ten com-odities to collect levies in excess of administrative expenses.

Section 2.—The Department of Consumer and Corporate Affairs

Legislation that received Royal Assent on Dec. 21, 1967 (SC 1967-68, c. 16), transrmed the former Department of the Registrar General of Canada into the new Departent of Consumer and Corporate Affairs. The duties, powers and functions of the Minister tend to and include all matters over which the Parliament of Canada has jurisdiction, t by law assigned to any other department, branch or agency of the Government of anada, relating to consumer affairs; corporations and corporate securities; combines, ergers, monopolies and restraint of trade; bankruptcy and insolvency; and patents, copy-ghts and trade marks.

The Department has three main divisions—the Bureau of Consumer Affairs, the ıreau of Corporate Affairs, and the Office of the Director of Investigation and Research ıder the Combines Investigation Act. The Bureau of Consumer Affairs co-ordinates vernment activities in the field of consumer affairs. Branches within the Bureau include nsumer Services, Consumer Research, Operations and Standards. Regional Offices have en established at Halifax, Montreal, Toronto, Winnipeg and Vancouver. Branches of the ıreau of Corporate Affairs include Bankruptcy with Regional Offices in Montreal, Toronto d Vancouver, Corporations, Trade Marks, the Patent and Copyright Office, the Registran Division, and the Corporate Research Branch. Branches under the direction of the fice of the Director of Investigation and Research under the Combines Investigation Act clude the Combination Branch, the Merger and Monopoly Branch, the Trade Practices anch and the Research Branch. The Director also has special investigators in each of e five Regional Offices whose job is investigation of cases of misleading advertising. The estrictive Trade Practice Commission (Combines Investigation Act) is also domiciled in e Department and reports directly to the Minister.

Branches which serve the Department as a whole are Financial and Administrative rvices, Personnel and Information and Public Relations.

mbines, Mergers, Monopolies and Restraint of Trade

The purpose of Canadian anti-combines legislation is to assist in maintaining free d open competition as a prime stimulus to the achievement of maximum production, tribution and employment in a system of free enterprise. To this end, the legislation ks to eliminate certain practices in restraint of trade that serve to prevent the nation's nomic resources from being most effectively used for the advantage of all citizens.

By amendments that came into force on Aug. 10, 1960 (SC 1960, c. 45), all the provisions of the anti-combines legislation which previously had been divided between the Combines Investigation Act (RSC 1952, c. 314) and the Criminal Code were amended and consolidated in the Act. The substantive provisions now are contained in Sects. 2, 32, 33, 33A, 33B, 33C and 34 of the Combines Investigation Act. The Act was enacted in 1923 and was amended extensively in 1935, 1937, 1946, 1949, 1951 and 1952 as well as in 1960. On July 31, 1969, Sect. 306 of the Criminal Code prohibiting false or misleading advertisements was transferred to the Act as Sect. 33D.

Sect. 32, generally speaking, forbids in Subsect. (1) combinations that prevent or lessen "unduly" competition in the production, manufacture, purchase, barter, sale, storage, rental, transportation or supply of an article of trade or commerce or in the price of insurance. Subsect. (1) derives from Sect. 411 of the Criminal Code which was enacted originally in 1889. Although Subsect. (2) provides that no person shall be convicted for participation in an arrangement relating only to such matters as the exchange of statistics or the defining of product standards, etc., Subsect. (3) provides that Subsect. (2) does not apply if the arrangement has lessened or is likely to lessen competition unduly in respect of prices, quantity or quality of production, markets or customers or channels of distribution, or if the arrangement "has restricted or is likely to restrict any person from entering into or expanding a business in a trade or industry". Subsect. (4) provides that, subject to Subsect. (5), no person shall be convicted for participation in an arrangement which relates only to the export trade. Subsect. (5) provides that Subsect. (4) does not apply if the arrangement has had or is likely to have harmful effects on the volume of export trade or on the businesses of Canadian competitors or on domestic consumers.

Sects. 2 and 33 make it an offence to participate in a merger that has or is likely to have the effect of lessening competition to the detriment or against the interest of the public. These Sections also make it an offence to participate in a monopoly that has been operated or is likely to be operated to the detriment or against the interest of the public.

Sect. 33A deals with what are commonly called "price discrimination" and "predatory price cutting". It provides that a supplier may not make a practice of discriminating among those of his trade customers who come into competition with one another by giving one a preferred price which is not available to another if the second is willing to buy in like quantities and qualities as the first; it also forbids a supplier from selling at prices lower in one locality than in another, or unreasonably low anywhere, if the effect or tendency of such policy is to lessen competition substantially or eliminate competitors or the policy is designed to have such effect.

Sect. 33B provides that where a supplier grants advertising or display allowances to competing trade customers he must grant them in proportion to the purchases of such customers; any service he exacts in return must be such that his different types of customers are able to perform; and if such customers are required to incur expenses to earn such allowances, such expenses also must be proportionate to their purchases.

Sect. 33C makes it an offence for any person, for the purpose of promoting the sale or use of an article, to make any materially misleading representation to the public concerning the price at which such or like articles have been, will be or are ordinarily sold.

Sect. 33D makes it an offence to publish an advertisement containing a statement that purports to be a statement of fact but is untrue, deceptive or misleading or is intentionally so worded or arranged that it is deceptive or misleading if the advertisement is published to promote a business or commercial interest or the sale or disposal of property.

Sect. 34 prohibits a supplier of goods from prescribing the prices at which they are to be resold by wholesalers or retailers or from cutting off supplies to a merchant because of the merchant's failure or refusal to abide by such prices, i.e., the practice of "resale price maintenance". The Section also provides that it shall not be inferred that a person practised resale price maintenance simply because he refused or counselled the refusal of supplies to a merchant if there were reasonable cause to believe and the supplier did believe that the merchant was making a practice of using articles of such supplier as "loss-

ders" or as bait advertising or was making a practice of engaging in misleading adver-ng in respect of such articles or of not providing services that purchasers of such articles ght reasonably expect.

The Director of Investigation and Research is responsible for investigating combines l other restrictive practices, and the Restrictive Trade Practices Commission is respon-le for appraising the evidence submitted to it by the Director and the parties under estigation, and for making a report to the Minister of Consumer and Corporate Affairs. nen there are reasonable grounds for believing that a forbidden practice is engaged the Director may obtain from the Commission authorization to examine witnesses, rch premises, or require written returns. After examining all the information available, he Director believes that it proves the existence of a forbidden practice, he submits tatement of the evidence to the Commission and to the parties believed to be respon-le for the practice. The Commission then sets a time and place at which it hears argu-nt on behalf of the Director in support of his statement, and hears argument and receives dence on behalf of any persons against whom allegations have been made in the state-nt. Following this hearing, the Commission prepares and submits a report to the nister of Consumer and Corporate Affairs, ordinarily required to be published within rty days.

Under the provisions of the Act, general inquiries may be made into restraints of de which, although not forbidden or punishable, may affect the public interest. The rts, including the Exchequer Court of Canada,* in addition to imposing punishment a contravention of the legislation, may make an order restraining persons from em-king on, continuing or repeating a contravention or directing the dissolution of a merger monopoly as the case may be. Application also may be made to the courts for such order in lieu of prosecuting and convicting for a contravention of the legislation. Pros-tions for offences against the substantive provisions of the legislation (other than t. 33C which is punishable only on summary conviction) may be taken either in the vincial courts or with the consent of the accused in the Exchequer Court of Canada.*

In July 1969, following a reference by the Government, the Economic Council of nada submitted its Interim Report on Competition Policy which recommended substan-l changes in the Combines Investigation Act. The recommendations are under study ore revisions to the Act are introduced to Parliament.

In the period Jan. 1, 1967, to June 30, 1970, the following reports of inquiries under the islation were published:—

(1) "Specials" in Eggs, Kingston Area, Ont.
(2) Glued-Laminated Timbers.
(3) Cast Iron Soil Pipe.
(4) Resale Prices of Corning Glassware.
(5) Dairy Products, Montreal.
(6) Resilient Flooring, Toronto.
(7) Prices of Gasoline, Sudbury.
(8) Road Paving in Ontario.
(9) Business Forms.
(10) Business Forms, Quebec.

These reports and copies of the annual reports under the Act may be obtained from ormation Canada or the office of the Director of Investigation and Research, Combines vestigation Act, Department of Consumer and Corporate Affairs, Ottawa.

tents

Letters patent are issued subject to the provisions of the Patent Act (RSC 1952, c. 203, amended) and Patent Regulations have been proclaimed to carry into effect the objects the Act. By an amendment that came into effect on July 1, 1969, an abstract of the closure of the application is required with each application for patent; by an amend-

* Now the Federal Court of Canada.

ment effective June 27, 1969, Rules were added dealing with applications for licence unde Sect. 41 of the Act; and by an amendment effective Oct. 1, 1969, all fees previously foun in Sect. 75(1) of the Act and Schedules B and C of the Rules were consolidated into a ne Schedule B of the Rule, and certain fees were changed. Applications for patents and re quests for information about patents should be addressed to the Commissioner of Patent Ottawa.

The number of patents granted each year has increased steadily from 4,522 at th beginning of the century to 28,981 in the year ended Mar. 31, 1970. Approximatel 5.0 p.c. of the patents granted resulted from inventions made by residents of Canada 7.5 p.c. by residents of Britain and other Commonwealth countries and 66.0 p.c. by resi dents of the United States.

Printed copies of Canadian patents issued from Jan. 1, 1948 to date are available at nominal fee. The *Patent Office Record*, published every week, contains an abstract of eac patent, information about the services available in the Patent Office, and information fo the patent profession.

Canadian and foreign patents may be consulted at the Patent Office Library. Britis patents and abridged specifications thereof from 1617 to date and United States patent from 1845 to date are available, as well as many patents, indexes, journals and report from Australia, India, Ireland, New Zealand, Pakistan, South Africa, Austria, Belgium Colombia, Czechoslovakia, Egypt, France, Germany, Italy, Japan, Mexico, the Nether lands, Norway, Sweden, Switzerland and Yugoslavia. A list of the foreign patents avail able is published in the *Patent Office Record.*

1.—Patents Applied for, Granted, etc., Years Ended Mar. 31, 1966-70

Item		1966	1967	1968	1969	1970
Applications for patents	No.	30,093	29,618	29,586	31,091	31,360
Patents granted	"	24,241	24,432	25,836	27,703	28,981
Granted to Canadians	"	*1,131*	*1,827*	*1,591*	*1,433*	*1,461*
Caveats granted	"	275	258	304	303	229
Petitions under Sect. 41, 67	"	6	3	10	11	64
Assignments	"	27,795	27,864	29,614	28,006	28,253
Fees	$	2,249,532	3,550,685	4,345,015	4,491,408	5,195,126

Copyrights, Industrial Designs and Timber Marks

Copyright protection is governed by the Copyright Act (RSC 1952, c. 55) in force since 1924. Protection is automatic without any formality, although a system of voluntary registration is provided. Application for registration should be addressed to the Commissioner of Patents, Ottawa.

The Act sets out the qualifications for a copyright and its duration: "Copyrights shall subsist in Canada . . . in every original literary, dramatic, musical and artistic work, if the author was, at the date of the making of the work, a British subject, a citizen or subject of a foreign country which has adhered to the Berne Convention and the additional Protocol . . . or resident within Her Majesty's Dominions. The term for which the copyright shall subsist shall, except as otherwise expressly provided by this Act, be the life of the author and a period of fifty years after his death."

Canada belongs to the Universal Copyright Convention. This means that the works of Canadian authors are protected in the United States without formality of compulsory registration or the obligation of printing in the United States, provided that, from the first publication, the work bears in a prominent place the following identification: ©, followed by the name of the proprietor and the year of publication.

Copyright protection is extended to records, perforated rolls, cinematographic films, d other contrivances by means of which a work may be mechanically performed. The tention of the Act is to enable Canadian authors to obtain full copyright protection in nada, in all parts of the Commonwealth, in foreign countries of the Copyright Union d in the United States. Protection of industrial designs and of timber marks is afforded der the Industrial Design and Union Label Act and the Timber Marking Act. Registers such designs and marks are kept by the Copyright Branch of the Patent Office.

2.—Copyrights, Industrial Designs and Timber Marks Registered, Years Ended Mar. 31, 1966-70

Item		1966	1967	1968	1969	1970
pyrights registered	No.	7,720	7,575	7,875	8,067	8,611
dustrial designs registered	"	1,030	1,088	1,197	902	1,026
mber marks registered	"	3	—	1	1	—
signments registered	"	2,421	1,948	2,288	2,310	2,032
es received, net	$	37,651	37,212	39,737	38,768	43,994

rade Marks

The Trade Marks Office, a Branch of the Consumer and Corporate Affairs Department, inisters the Trade Marks Act (SC 1952-53, c. 49) which covers all legislation concerning e registration and use of trade marks and supersedes from July 1, 1954, former legislation acted under the Unfair Competition Act, the Union Label Act and the Shop Cards egistration Act. Correspondence relating to an application for registration of a trade ark should be addressed to the Registrar of Trade Marks, Ottawa.

Applications are advertised for opposition purposes in the *Trade Marks Journal*, a eekly publication that also gives particulars of every registration of a trade mark and ery registration of a registered user. The required fee payable on application for regration of a trade mark is $35, for advertisement of an application $25 and for registration a person as a registered user of a trade mark, $35.

3.—Trade Marks Registered, Years Ended Mar. 31, 1966-70

Item		1966	1967	1968	1969	1970
ade marks registered	No.	5,097	5,704	6,462	5,976	6,646
ansfers registered	"	3,508	4,155	4,917	5,449	4,860
ade mark registrations renewed	"	2,727	2,914	3,356	3,504	2,432
pies prepared	"	24,137	32,610	44,818	56,631	65,875
es received, net	$	412,568	429,658	476,138	671,743	869,319

Section 3.—Control and Sale of Alcoholic Beverages

The retail sale of alcoholic beverages in Canada is controlled by provincial and territorial government liquor control authorities. Alcoholic beverages are sold directly by most these liquor control authorities to the consumer or to licensees for resale. However, in me provinces beer and wine are sold directly by breweries and wineries to consumers or licensees for resale. During the year ended Mar. 31, 1969, provincial government uor authorities operated 1,208 retail stores and had 197 agencies in smaller centres of pulation.

Government revenue specifically related to alcoholic beverages and details of sales by lue and volume for each province are given below. DBS report, *The Control and Sale Alcoholic Beverages in Canada* (Catalogue No. 63-202) shows further detail as well as

volume figures of production and warehousing transactions, the value and volume of imports and exports and the assets and liabilities of provincial liquor commissions.

4.—Revenue of Provincial and Territorial Governments Derived Specifically from the Control and Sale of Alcoholic Beverages, Years Ended Mar. 31, 1968 and 1969

NOTE.—Figures include revenue collected directly by the provincial and territorial governments as well as revenue of the liquor authorities, but exclude revenue resulting from general retail sales taxation with the exception of the 1969 figures for Quebec, which include $10,140,000 in sales tax collected at outlets.

Province or Territory	1968			1969		
	Net Income from Sales[1]	Sales Tax, Licences and Permits, and Other	Total	Net Income from Sales[1]	Sales Tax, Licences and Permits, and Other	Total
	$'000	$'000	$'000	$'000	$'000	$'000
Newfoundland	5,539	4,998	10,537	6,296	5,510	11,806
Prince Edward Island	2,309	760	3,069	2,582	834	3,416
Nova Scotia	16,879	289	17,168	19,737	303	20,040
New Brunswick	12,823	537	13,360	16,999	634	17,633
Quebec	74,153	24,434	98,587	43,268	32,273	75,541
Ontario	116,789	33,843	150,632	153,641	40,372	194,013
Manitoba	20,093	3,608	23,701	22,071	3,718	25,789
Saskatchewan	23,934	655	24,589	25,046	708	25,754
Alberta	37,847	1,512	39,359	39,930	1,582	41,512
British Columbia	49,952	759	50,711	55,360	820	56,180
Yukon Territory	1,125	167	1,292	1,383	283	1,666
Northwest Territories	1,636	71	1,707	1,827	81	1,908
Canada	**363,079**	**71,633**	**434,712**	**388,140**	**87,118**	**475,258**

[1] After provision for depreciation on fixed assets and capital expenditure met out of operating income; includes commission on general sales tax collections.

Revenue of the Federal Government derived specifically from the control and taxation of alcoholic beverages comprising excise duties, excise taxes, import duties and certain fees and licences in that connection is shown in Table 5.

5.—Revenue of the Federal Government Derived Specifically from the Control and Taxation of Alcoholic Beverages, Years Ended Mar. 31, 1965-69

NOTE.—Figures exclude revenue from the general sales tax which is not available by commodities.

Nature of Levy	1965	1966	1967	1968	1969
	$'000	$'000	$'000	$'000	$'000
On Spirits	**165,638**	**193,159**	**199,024**	**223,018**	**227,055**
Excise duty	134,716	156,942	158,157	180,401	185,367
Licences	8	9	9	10	10
Import duty	30,914	36,208	40,858	42,607	41,678
On Beer	**105,685**	**108,234**	**113,609**	**120,902**	**135,581**
Excise duty	105,386	107,917	113,254	120,239	134,970
Licences	3	3	3	3	3
Import duty	296	314	352	660	608
On Wine	**6,634**	**7,203**	**8,231**	**9,081**	**9,166**
Excise taxes	4,092	4,402	4,752	5,327	5,860
Import duty	2,542	2,801	3,479	3,754	3,306
Totals[1]	**277,957**	**308,596**	**320,864**	**353,001**	**371,802**

[1] Drawbacks and refunds of duties and taxes have not been deducted.

Table 6 shows the value of sales of alcoholic beverages in 1967-69 but it should be noted that these figures do not always represent the final retail selling price of alcoholic beverages to the consumer because, when sold to licensees, only the selling price to licensees is known.

6.—Value of Sales of Alcoholic Beverages, Years Ended Mar. 31, 1967-69

Province or Territory	Spirits			Wines		
	1967	1968	1969	1967	1968	1969
	$'000	$'000	$'000	$'000	$'000	$'000
vfoundland	11,210	12,362	13,239	677	730	834
ıce Edward Island	3,993	4,491	4,853	401	436	479
va Scotia	23,512	25,788	29,459	3,166	3,414	3,876
v Brunswick	17,469	18,373	24,913	2,870	2,906	3,520
bec	144,284	160,220	110,853	31,427	35,056	26,792
ario	257,759	291,653	359,442	35,291	41,342	54,407
nitoba	32,342	34,622	37,577	4,471	4,908	5,583
katchewan	29,299	32,431	34,441	4,399	4,813	5,288
erta	54,810	60,675	66,640	7,780	8,778	10,249
ish Columbia	83,665	90,551	99,656	12,867	14,815	18,227
kon Territory	1,377	1,527	1,800	225	265	292
thwest Territories	1,562	1,675	1,960	237	286	324
Canada	**661,282**	**734,368**	**784,833**	**103,811**	**117,749**	**129,871**

Province or Territory	Beer			Totals		
	1967	1968	1969	1967	1968	1969
	$'000	$'000	$'000	$'000	$'000	$'000
vfoundland	17,226	18,667	18,936	29,113	31,759	33,009
ıce Edward Island	2,515	2,854	3,254	6,909	7,781	8,586
va Scotia	20,725	22,195	25,316	47,403	51,397	58,651
v Brunswick	16,128	16,941	19,346	36,467	38,220	47,779
bec	144,698	158,173	174,339	320,409	353,449	311,984[1]
ario	218,179	226,764	240,651	511,229	559,759	654,500
nitoba	33,914	34,130	35,680	70,727	73,660	78,840
katchewan	29,047	31,676	32,096	62,745	68,920	71,825
erta	42,898	46,753	48,900	105,488	116,206	125,789
ish Columbia	59,420	63,720	67,105	155,952	169,086	184,988
kon Territory	1,280	1,298	1,634	2,882	3,090	3,726
thwest Territories	1,344	1,502	1,698	3,143	3,463	3,982
Canada	**587,374**	**624,673**	**668,955**	**1,352,467**	**1,476,790**	**1,583,659**

[1] Includes the 8-p.c. sales tax collected at outlets, amounting to $10,140,000.

Volume of sales, as shown in Table 7, is a more realistic indicator of trends in consumption, although, as a measure of personal consumption by Canadians, it is subject to the same limitations as value sales in respect of purchases by non-residents.

7.—Volume of Sales of Alcoholic Beverages, Years Ended Mar. 31, 1967-69

Province or Territory	Spirits			Wines		
	1967	1968	1969	1967	1968	1969
	'000 gal.	'000 gal.	'000 gal.	'000 gal.	'000 gal.	'000 gal.
vfoundland	336	364	347	57	58	59
ce Edward Island	122	130	134	46	49	53
a Scotia	764	819	872	394	420	458
v Brunswick	518	538	701	343	341	398
bec	4,552	4,892	2,969	3,579	3,769	2,599
ario	8,474	9,383	10,836	4,119	4,652	5,861
itoba	999	1,046	1,078	568	611	698
katchewan	949	986	968	615	633	648
erta	1,625	1,724	1,811	1,054	1,138	1,314
ish Columbia	2,860	2,987	3,110	1,868	1,998	2,349
on Territory	37	40	45	21	23	25
thwest Territories	39	37	45	19	22	25
Canada	**21,275**	**22,946**	**22,916**	**12,683**	**13,714**	**14,487**

7.—Volume of Sales of Alcoholic Beverages, Years Ended Mar. 31, 1967-69—concluded

Province or Territory	Beer			Totals		
	1967	1968	1969	1967	1968	1969
	'000 gal.	'000 gal.	'000 gal.	'000 gal.	'000 gal.	'000 ga
Newfoundland	4,372	4,700	4,494	4,765	5,122	4,9
Prince Edward Island	814	781	967	982	960	1,1
Nova Scotia	7,721	7,973	8,653	8,879	9,212	9,9
New Brunswick	5,592	5,884	6,237	6,453	6,763	7,3
Quebec	88,850	94,580	99,150	96,981	103,241	104,7
Ontario	112,347	113,476	110,658	124,940	127,511	127,3
Manitoba	13,917	13,920	14,151	15,484	15,577	15,9
Saskatchewan	11,971	12,333	11,847	13,535	13,952	13,4
Alberta	20,131	21,478	22,255	22,810	24,340	25,3
British Columbia	28,193	29,660	29,936	32,921	34,645	35,3
Yukon Territory	313	321	394	371	384	4
Northwest Territories	323	305	355	381	364	4
Canada	**294,544**	**305,411**	**309,097**	**328,502**	**342,071**	**346,5**

Section 4.—Miscellaneous Aids or Controls

The National Energy Board

The National Energy Board was established under authority of the National Ener Board Act, 1959 (SC 1959, c. 46), for the broad purpose of assuring the best use of ener resources in Canada. The Board is responsible for adjudicating upon applications licences to export and to import natural gas, applications to construct and operate int provincial and international pipelines for the transportation of petroleum and its produ and of natural gas, and applications for licences to export electric power and energy, a for certificates to construct and operate international power lines. It is responsible regulating the rates, tolls and tariffs of oil and gas pipelines under its jurisdiction, a fi in which it is becoming increasingly active. The Board reports to Parliament through t Minister of Energy, Mines and Resources.

In addition to its regulatory responsibilities, the Board has an advisory role. In t capacity it is required to keep under review all matters relating to energy within the ju diction of the Parliament of Canada and to recommend to the Minister any measu that the Board considers necessary or advisable to undertake in the public interest to e sure proper use and development of energy and its sources.

In early 1970 the National Energy Board Act was amended, bestowing on the Boa certain additional responsibilities. The Board was given jurisdiction over internatio power lines constructed and operated for the purpose of importing power into Canada a basis comparable to the jurisdiction it had exercised previously over export power li only. The existing authority of the National Energy Board to license the import of g was extended to include the licensing for import of liquefied natural gas. Certain oth amendments dealing with the construction of pipelines through municipal and priva farm areas provided the Board with the authority to direct the pipeline company to dive relocate or otherwise reconstruct the appropriate portions of its pipeline so as to remo an existing interference or impairment or to otherwise facilitate reconstruction or relocati of drainage systems. In addition, because of the increase in the Board's workload arisi out of its existing regulatory and advisory functions, the membership of the Natio Energy Board was increased from five to seven.

Also in 1970, as a result of certain regulations made under Part IV of the Natio Energy Board Act, the Board is responsible for the licensing of the importation into Cana of motor gasoline or motor gasoline blending components.

The Board is also charged with the administration of the federal Oil Policy, which had ts initial short-term aim the attainment of higher production targets for oil, including ıral gas liquids. The basic intent of this policy has not changed.

The National Power Policy, announced in 1963, encourages the development of large- e power sources at lowest possible cost; the distribution of the benefits thereof as widely ossible through interconnections between power systems within Canada; and the long- n export of large blocks of power where such exports will induce early development of ıadian power resources. This policy also encourages the export of various classes of er under suitable interconnection agreements to provide for mutual assistance in emer- cies and for other economic benefits that can be derived by both parties through co- inated operation and development. In pursuance of these aims, the Board co-operates n other agencies in the consideration of interprovincial and international interconnec- s of electric power systems. In this context it is worthy of note that now almost all trical utilities in Canada and the United States are interconnected with neighbouring ems and are operating as part of one vast power network.

The Board is empowered to regulate the tolls charged by oil and gas pipeline companies, ject to its jurisdiction to ensure that such tolls are just and reasonable. To date, this er has not been invoked but, in anticipation of the commencement of formal rate rings, the Board has ordered into force Part IV of the National Energy Board Act ch concerns such matters.

The unique characteristics of regulated enterprises, of which pipelines form a part, essitate specialized accounting procedures to enable the Board to create uniform stand- s for the measurement and control of financial and rate matters. Accordingly, Uniform ounting Regulations are a prerequisite to any systematic regulation of rates, tolls and ffs and provide the means by which financial information can be compared. Regular its and investigations are conducted of pipeline companies' accounting records to en- e that Board regulations are followed and to extract essential financial information t is not disclosed in periodic financial statements. In carrying out its statutory respon- ities, the Board must be satisfied that the rates of a company under its jurisdiction are and reasonable and, in addition, that a pipeline's revenues will provide a fair rate of rn on its capital.

The Board conducts continuing studies of energy matters in order to maintain a bank current knowledge which is necessary for the Board to perform its regulatory and ad- ry functions. Energy supply and demand forecasts are a continuing function of the rd's work. Studies include both the Canadian and foreign markets since fuels and, to ore limited extent, electric power are traded internationally.

During 1969, a long-term energy forecast produced by the Board's staff was published tled *Energy Supply and Demand in Canada and Export Demand for Canadian Energy— 5 to 1990*. Copies are available from Information Canada.

e Standards Council of Canada

The Standards Council of Canada was established by Act of Parliament (SC 1969-70, 3), which received Royal Assent on Oct. 7, 1970. The Council will act as a national rdinating institution through which organizations concerned with voluntary standard- ion may co-operate in recognizing, establishing and improving standards in Canada and elop a broader and more energetic Canadian standards program to meet both national international responsibilities. Its structure is intentionally designed to make maximum of those organizations already in existence and functioning efficiently. The aim is to aden the range of activities and to co-ordinate them in order to obtain a more complete erage of standards needs.

The objects of the Council are to foster and promote voluntary standardization in s relating to the construction, manufacture, production, quality, performance and ty of buildings, structures, manufactured articles and products and other goods, in- ling components thereof, not expressly provided for by law, as a means of advancing

the national economy, benefiting the health, safety and welfare of the public, assisting a protecting consumers, facilitating domestic and international trade and furthering int national co-operation in the field of standards. It will be responsible in the private sec for encouraging preparations for change to the metric system in a manner to achieve op mum benefits at minimum cost and will ensure that, in the process of rewriting standar to metric terms, there will be an opportunity to update the standards themselves wh appropriate.

The Council will consist of not more than 57 members, headed by a president and vice-president. The seats of the Council, other than the 16 assigned to government rep sentatives (six federal and ten provincial), will be occupied by representatives of natio organizations. Membership will be broadly representative of all levels of governme (federal, provincial and municipal), primary and secondary industries, distributive a service industries, trade associations, labour unions, provincial associations, consum associations and the academic community.

Trade Standards and Regulations

In its consumer program, the Department of Consumer and Corporate Affairs is sponsible for the administration of broad legislation which affects the business communit Policies and programming are determined by the Standards Branch, and the necessa field supervision by the Operations Branch.

Hazardous Products.—General regulations issued under the Hazardous Produc Act provide for the banning or the regulated sale of a variety of dangerous products whi are toxic, flammable, explosive, or corrosive. These relate largely to household produc Toy Regulations are directed to eliminating dangerous toys.

General Commodity Field.—The National Trade Mark and True Labelling A provides a framework for the development of National Standards and true labelling order to prevent deception in labelling and advertising. The Garment Sizing Regulatio were developed as a National Standard for sizing of childrens' garments. The labelli provision has been used for regulation for fur garments, watch jewels, textiles, etc. Textil will be subject to special new requirements which are being established under a new Text Products Act. (See p. 1345.)

Control of marking of precious metal articles is maintained under the Precious Met Marking Act. This Act will shortly be replaced by a revised statute passed by Parliame

In the packaging and labelling field, a Packaging and Labelling Bill is before Parli ment for consideration (December 1970). This is umbrella legislation to give uniformi to packaging practices in Canada, to reduce packaging and advertising deception, and control proliferation.

Food.—In areas of health, grading, standards and composition, the Food and Dr Act, the Canadian Agricultural Products Standards Act and the Fish Inspection Act a generally applicable. The Consumer and Corporate Affairs Department is charged wi administration of the economic fraud aspects in distribution. This area is concern mainly with labelling, and advertisement in any segment of the news media.

Advertising.—Most legislation has particular requirements to ensure against mi leading advertising. Notice should be taken of Sections 33(c) and (d) of the Combin Investigation Act administered in the Corporate activity of the Department; these inclu general provisions against misleading advertising practices.

Measurement.—The Weights and Measures Act prescribes the legal standards weight and measure for use in Canada; it also requires control of the type of all weighi and measuring devices used for commercial purposes and their periodic verification an surveillance directed toward the elimination of sales by short weight or short measure.

placing Bill is at present (December 1970) before Parliament. The fundamental objec-ves of existing legislation are unchanged. The new Bill is an updating, and complements ie proposed packaging and labelling legislation.

The Electricity Inspection Act and the Gas Inspection Act control the approval before le and use of devices used for the sale of electricity and gas. It also provides a frame-ork for continual in-use inspection.

overnment Financial Assistance for Coal*

The Canadian coal mining industry is faced with the problem that the producing mines re not located near the main consuming markets in Ontario and Quebec, which markets e in close proximity to the more economic United States coals. Transportation subven-ons, which have been maintained in varying degrees since 1927, were designed to further ie movement of Canadian coals by equalizing as far as possible the laid-down costs of nported coals in various market areas and, since 1962, the laid-down costs of imported sidual oil in the Atlantic Provinces and Quebec. From inception in 1927 to Mar. 31, 969, $320,999,665 was paid in subvention aid by the Federal Government.

As a result of federal-provincial agreements and the establishment of the Cape Breton evelopment Corporation in Nova Scotia and the Grand Lake Development Corporation New Brunswick, subvention aid was discontinued in 1968 in Eastern Canada. In Vestern Canada, authority for paying subventions expired on Mar. 31, 1970, with the xception that a one-year extension (to Mar. 31, 1971) was continued with respect to aid n two export contracts with Japan.

As a result of these changes, subvention payments were reduced from $12,800,000 in 968 to $3,500,000 in 1969. Of the latter figure, $3,200,000 was used to assist British olumbia and Alberta mines exporting coal to Japan and $250,000 was used to move ritish Columbia, Alberta and Saskatchewan coals to Ontario. Consequently, after Iar. 31, 1971, subvention payments will cease entirely.

Although the Canadian Coal Equality Act (RSC 1952, c. 34), which implemented one the recommendations of the Royal Commission on Maritime Claims (1926), was de-gned to assist the Canadian steel industry, it also was of benefit to the Canadian coal dustry, particularly in Eastern Canada. It provided for the payment of 49.5 cents per n of bituminous coal mined in Canada and converted into coke to be used in the Canadian anufacture of iron and steel. Payments by the Dominion Coal Board under the Canadian oal Equality Act ended on Mar. 31, 1968, and the Act was withdrawn on May 1, 1970 by roclamation of the Governor in Council. Payments were made on 54,768 tons in the mount of $27,108 during January, February and March 1968. Shipments to which these ayments applied were made during the latter part of November 1967 through March 1968.

PART III.—BANKRUPTCIES AND COMMERCIAL FAILURES

Two series of figures are included in this Part which, although closely related as far s subject matter is concerned, cover different aspects of the field of bankruptcies and com-ercial failures. The first, under the heading of "Administration of Bankrupt Estates" limited to the supervision, by the Superintendent of Bankruptcy, of the administration bankrupt estates under the Bankruptcy Act (including the Farmers' Creditors Arrange-ent Act); it gives information on the amounts realized from the assets as established by ebtors and indicates that values actually paid to creditors are invariably very much lower an such estimates alone would imply. It can therefore be assumed that this applies in ven greater degree to the more extended fields covered in the second section under the eading of "Returns under the Bankruptcy and Winding-Up Act" which is compiled by ie Dominion Bureau of Statistics. This series is limited to bankruptcies and insolvencies ade under federal legislation and includes business failures only (see p. 1053).

* Prepared by the Mines Branch, Department of Energy, Mines and Resources, Ottawa.

Administration of Bankrupt Estates.*—The Bankruptcy Act, which was last revised in 1949, was amended by SC 1966, c. 32. These amendments were instigated by exposures and suggestions of illegal and improper practices in connection with bankruptcy proceedings or administration. They do not constitute a complete revision of the Bankruptcy Act but were designed rather to provide, as an interim measure, remedies to the most urgent areas of complaints. They provide the Superintendent of Bankruptcy with direct and immediate authority in the field of investigation and inquiry, and tighten the procedures and requirements in a number of areas, such as that of proposals which an insolvent person may make to his creditors. In other words, these amendments were intended to provide remedies in situations where it had been shown by experience that abuses of the bankruptcy process are most likely to occur. The amendments also contain a new Part X entitled "The Orderly Payment of Debts" which may come into force in any province at the request of the provincial authorities concerned. This Part came into force in Alberta on Apr. 17, 1967, and in Manitoba on June 1, 1967.

A report issued annually by the Superintendent of Bankruptcy gives statistics and comments on various activities in the field of bankruptcy, such as prosecution for offences, issue of licences for trustees in bankruptcy, number of estates reported and closed during the year, and costs of bankruptcy administration in Canada.

* Revised by the Superintendent of Bankruptcy, Ottawa.

1.—Summary Statistics of Estates Closed during 1969 under the Bankruptcy Act

Province or Territory	Bankruptcies under General Provisions of the Act					
	Estates Closed	Assets as Estimated by Debtors	Liabilities as Estimated by Debtors	Realization by Trustee	Costs of Administration	Costs as Percentage of Realization
	No.	$'000	$'000	$'000	$'000	p.c.
Nfld.	2	18	23	11	1	9
P.E.I.	7	179	189	27	6	22
N.S.	21	482	863	144	41	28
N.B.	35	1,309	910	709	241	34
Que.	4,057	101,153	114,026	12,828	7,144	56
Ont.	1,843	33,980	56,021	6,864	3,103	45
Man.	103	1,148	2,021	315	127	40
Sask.	55	346	1,149	110	48	44
Alta.	143	1,435	4,245	425	222	52
B.C.	146	3,795	7,270	1,135	421	37
Totals	**6,412**	**143,845**	**186,717**	**22,568**	**11,354**	**50**

Province or Territory	Bankruptcies under General Provisions of the Act			Proposals under Sect. 27 (1) (a)		
	Paid to Unsecured Creditors	Retained by Secured Creditors	Average Percentage Recovered by Creditors	Proposals Closed	Unsecured Liabilities as Estimated by Debtors	Paid to Unsecured Creditors
	$'000	$'000	p.c.	No.	$'000	$'000
Nfld.	10	—	43	—	—	—
P.E.I.	21	72	11	—	—	—
N.S.	103	84	12	2	136	1
N.B.	468	601	51	1	68	23
Que.	5,684	62,350	5	539	32,131	4,625
Ont.	3,761	17,999	7	53	13,518	1,520
Man.	188	633	9	3	279	101
Sask.	62	123	5	1	5	4
Alta.	203	1,768	5	5	1,346	389
B.C.	714	1,327	10	11	1,233	311
Totals	**11,214**	**84,957**	**6**	**615**	**48,716**	**6,974**

Returns under the Bankruptcy and Winding-Up Acts.*—The DBS statistics ncerning bankruptcies and insolvencies cover only the failures coming under federal gislation, i.e., the Bankruptcy Act and the Winding-Up Act. The figures of Table 2 ver business failures only, excluding failures of individuals such as wage-earners, sales- en and executive personnel.

* Prepared by the Business Finance Division, Dominion Bureau of Statistics.

2.—Bankruptcies and Insolvencies under Federal Legislation, by Province, 1960-69

Year	Atlantic Provinces	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
	No.	No.	No.	No.	No.	No.	No.	No.
60	48	1,638	914	34	28	46	120	2,828
61	47	1,450	932	39	25	62	104	2,659
62	33	1,694	1,177	47	36	94	109	3,190
63	60	1,987	1,389	45	37	67	92	3,677
64	67	1,872	1,281	53	30	80	116	3,499
65	43	1,748	1,248	41	22	103	90	3,295
66	40	1,698	1,022	55	29	79	84	3,007
67	43	1,446	893	60	35	64	90	2,631
68	39	1,248	921	64	50	73	121	2,516
69	52	1,424	895	60	64	87	117	2,699

3.—Bankruptcies and Insolvencies under Federal Legislation, by Branch of Business, 1960-69

Year	Primary Industries	Manufacturing	Construction	Transportation, Communications and Other Utilities	Trade	Finance, Insurance and Real Estate	Service	Total
	No.	No.	No.	No.	No.	No.	No.	No.
60	100	323	619	129	1,229	65	363	2,828
61	86	285	470	113	1,234	69	402	2,659
62	93	326	573	143	1,496	82	477	3,190
63	111	365	714	166	1,634	110	577	3,677
64	146	327	706	181	1,492	92	555	3,499
65	151	346	628	193	1,359	115	503	3,295
66	156	323	559	168	1,236	95	470	3,007
67	138	272	451	186	1,055	122	408	2,631
68	110	267	442	168	1,061	86	382	2,516
69	111	278	440	203	1,150	100	417	2,699

4.—Estimated Liabilities[1] of Bankruptcies and Insolvencies, 1960-69

Year	Atlantic Provinces	Quebec	Ontario	Prairie Provinces	British Columbia	Total
	$'000	$'000	$'000	$'000	$'000	$'000
60	3,568	61,851	91,090	7,732	10,307	174,548
61	4,714	49,133	48,352	7,075	7,246	116,520
62	2,566	77,002	55,946	6,843	7,083	149,440
63	3,788	91,467	84,260	8,330	7,757	195,602
64	5,863	111,172	71,193	12,144	8,362	208,734
65	2,513	107,182	258,934	15,234	9,787	393,650
66	5,242	112,681	108,631	10,989	9,924	247,467
67	6,772	123,457	60,422	21,344	6,069	218,064
68	1,868	89,771	62,883	16,403	9,810	180,735
69	3,137	118,534	51,078	13,208	25,148	211,105

[1] Estimated by debtors and therefore should be accepted with reservations.

5.—Bankruptcies and Insolvencies, by Industry and Economic Area, 1969

Industry	Atlantic Provinces	Quebec	Ontario	Prairie Provinces	British Columbia	Total	Total Liabilities
	No.	No.	No.	No.	No.	No.	$'000
Primary Industries	**1**	**41**	**42**	**17**	**7**	**111**	**5,609**
Manufacturing	**3**	**159**	**88**	**19**	**9**	**278**	**40,071**
Foods and beverages	1	12	8	3	1	25	3,373
Textiles	—	4	5	—	—	9	3,269
Clothing	—	31	8	—	—	39	4,185
Wood	2	38	18	4	3	65	4,899
Paper and allied industries	—	19	11	1	1	32	3,432
Primary and fabricated metal, machinery, transportation equipment, electrical products and non-metallic mineral products	—	33	29	10	4	76	16,989
Chemical	—	2	—	—	—	2	49
Other industries	—	20	9	1	—	30	3,875
Construction	**11**	**224**	**131**	**43**	**31**	**440**	**35,959**
General contractors	4	90	46	15	13	168	15,962
Special trade contractors	7	134	85	28	18	272	19,997
Transportation, Communications and Other Utilities	**2**	**85**	**83**	**24**	**9**	**203**	**7,798**
Trade	**23**	**612**	**394**	**88**	**33**	**1,150**	**50,700**
Food	4	152	65	6	8	235	9,229
General merchandise	1	23	13	9	3	49	2,670
Automotive products	8	109	100	28	7	252	9,923
Apparel and shoes	4	106	46	5	4	165	6,313
Hardware	1	33	24	5	3	66	4,824
Household furniture and appliances	1	65	49	4	4	123	5,017
Drugs	—	8	1	2	1	12	591
Other trades	4	116	96	29	3	248	12,133
Finance, Insurance and Real Estate	**2**	**62**	**25**	**2**	**9**	**100**	**47,058**
Service	**10**	**238**	**132**	**18**	**19**	**417**	**23,910**
Education, health and welfare	—	17	6	1	1	25	1,067
Recreational	3	24	11	—	3	41	1,262
Business	—	33	24	—	3	60	6,290
Personal	5	145	77	12	11	250	13,253
Other	2	19	14	5	1	41	2,038
Totals	**52**	**1,424**	**895**	**211**	**117**	**2,699**	**211,105**

PART IV.—PRICES*

Price statistics primarily take the form of indexes which express prices in each period as a percentage of prices in a designated base period. The indexes measure the movement of prices from period to period. Another less frequent type of price index expresses prices in one location as a percentage of prices in a base location, which is set equal to 100, and measures the comparative levels of prices between places (Table **13**) at a point in time. In addition to indexes, price statistics may take the form of price averages (Table **10**). Price averages reflect the structure of prices at a given period of time.

Summary tables of available price statistics are presented herein relating to general wholesale prices, prices of capital goods and construction, consumer prices, and prices of

* Prepared in the Prices Division, Dominion Bureau of Statistics.

mmon and preferred stocks. In addition, statistics on patterns of family expenditure, income group, are provided in Section 5. For further details, including indexes of selling es of each of some 100 Canadian manufacturing industries, the reader is advised to sult the monthly DBS publication *Prices and Price Indexes* (Catalogue No. 62-002). addition, price indexes relating to merchandise exports and imports (Chap. XXII) are lished monthly in Catalogue No. 65-004 and No. 65-007, respectively. Similarly, licit price indexes for gross national product and its main components (Chap. XXIV) published quarterly in Catalogue No. 13-001.

Section 1.—Index Numbers of Wholesale Prices

The term "wholesale prices" refers to transactions that occur below the retail level. has more of a connotation of bulk purchase and sale than of any homogeneous level of tribution. Wholesale price indexes and individual price series have numerous uses, of the most important of which is in escalator clauses of contracts where prices quoted linked to movements of specified price indexes. They are also of major importance in dies of replacement and construction costs in investment projects; analyses of price vements of both individual items and commodity groups in relation to purchases and es; industrial planning and market analysis; valuations for tax purposes and inventory lysis; and studies of changes in physical volume. Foreign companies also utilize the exes in assessing the competitive position of Canadian goods.

General Wholesale Index.—The general wholesale index mainly includes manufac-rs' prices but also incorporates those of wholesalers proper, assemblers of primary ducts, agents and operators of other types of commercial enterprises which trade in mmodities of a type, or in quantities characteristic of primary marketing functions. es are grouped according to a commodity classification scheme based on chief com-ent material similarities. Indexes classified according to degree of manufacture are available. In Table **1**, the general wholesale index is presented for the period 1946-69. is index is used as a conventional summary figure against which to observe the behaviour particular price groups such as farm products, raw materials and building materials, for ich separate price indexes have been constructed. Table **2** gives, for the years 1960-69, general wholesale price index and two of its integral classifications—raw and partly nufactured goods, and fully and chiefly manufactured goods; also presented are two ted systems—industrial materials and Canadian farm products.

1.—General Wholesale Index Annual Averages, 1946-69

(1935-39=100)

Year	Average	Year	Average	Year	Average	Year	Average
6.....	138.9	1952.....	226.0	1958.....	227.8	1964.....	245.4
7.....	163.3	1953.....	220.7	1959.....	230.6	1965.....	250.4
8.....	193.4	1954.....	217.0	1960.....	230.9	1966.....	259.5
9.....	198.3	1955.....	218.9	1961.....	233.3	1967.....	264.1
0.....	211.2	1956.....	225.6	1962.....	240.0	1968.....	269.9
1.....	240.2	1957.....	227.4	1963.....	244.6	1969.....	282.4

2.—Annual Index Numbers of Wholesale Price Groups, 1960-69

(1935-39=100)

Year	General Wholesale Index	Raw and Partly Manufactured Goods	Fully and Chiefly Manufactured Goods	Industrial Materials	Canadian Farm Products		
					Field	Animal	Total
1960	230.9	209.6	242.2	240.4	189.1	264.1	226.
1961	233.3	212.6	244.5	243.2	191.7	270.0	230.
1962	240.0	223.8	249.0	248.0	195.5	286.0	240.
1963	244.6	226.9	254.2	253.5	197.2	275.4	236.
1964	245.4	225.7	256.4	258.3	198.2	267.3	232.
1965	250.4	231.2	261.3	258.7	210.3	289.3	249.
1966	259.5	242.7	268.6	261.4	209.7	321.5	265.
1967	264.1	246.1	274.2	253.1	202.5	325.3	263.
1968	269.9	249.1	281.6	254.0	186.3	329.3	257.
1969	282.4	260.0	294.9	267.7	184.0p	357.9p	271.

The "Economic White Paper" tabled in the House of Commons on Mar. 12, 197 stated that inflation was the most pressing economic problem in 1969. Throughout tl year, demand had fluctuated around a high level while monetary and fiscal policies ha been directed toward restraint. The year was marked by a notable acceleration in tl rate of price increase, as measured by the general wholesale price index. For exampl this index rose by 4.3 p.c. through the year in contrast to an increase of 2.8 p.c. a ye earlier. The gross weighted index of industry selling prices displayed a similar patter having increased by 4.2 p.c. between December 1968 and December 1969 and by 2.3 p. in the earlier 12-month period ended December 1968.

Major groups of the general wholesale price index showed diverse movements durin 1969. Non-ferrous metals rose 18 p.c., while chemical products increased by 4 p.c., no metallic minerals 2 p.c., animal products 8 p.c. and iron products 7 p.c. Wood produc prices, influenced by the trend in housing starts, reached a peak in March 1969 after climb ing steeply but declined for the remainder of the year so that, on balance, there was only fractional increase. Vegetable products also increased fractionally but textile produc showed a slight decline.

World Wholesale Price Indexes.—Price changes within different countries hav varied widely during the years. Comparisons of Canadian wholesale price indexes wit those of other countries are given in Table 3.

3.—Index Numbers of Wholesale Prices in Canada and Other Countries, 1967-69

(1963=100)

SOURCE: *United Nations Monthly Bulletin of Statistics*, June 1970.

Country	1967	1968	1969	Country	1967	1968	1969
Belgium	107	107	113	India	154	153	156
Brazil	497	517	..	Iran	106	107	..
Britain	107	117	121	Ireland	116	123	132
				Korea, Republic of	172	185	198
Canada	**108**	**110**	**115**	Netherlands	115	116	117
				New Zealand	107	115	121
Chile	274	358	489	Norway	112	113	117
Denmark	110	114	117	Sweden	112	113	118
France	105	106	115	Switzerland	104	104	107
Germany, Federal Republic of	104	99	101	Turkey	123	129	..
Greece	109	109	113	United Arab Republic	130	127	126
				United States	106	108	113

Section 2.—Price Index Numbers of Construction and Capital Goods

This Section covers price indexes currently available for residential, non-residential ilding, and engineering construction. Further details concerning these series or de- opments under way in other areas are available from the Prices Division of DBS.

Residential and Non-residential Building Construction Indexes.—Two series indexes are produced by DBS measuring price changes for residential and non-residen- l building construction. These are base-weighted indexes of materials and labour, and presented in Table 4 for the years 1956-69 (figures from 1935 are available in the May 70 issue of *Prices and Price Indexes*).

The building materials price indexes are drawn from the system of industry selling ce indexes (*Industry Selling Price Indexes 1956-1968*, Catalogue No. 62-528) and relate a selection of building materials derived from a sample of buildings surveyed after the cond World War. Some modifications have since been introduced into the series (de- ibed in *Prices and Price Indexes* for March 1969 and May 1970) and the federal sales has been added to the materials indexes as appropriate. The wage rate component derived from surveys conducted by the Department of Labour for construction trades various centres; these are base rates and usually reflect union scale or collective agree- nts. The combined indexes of materials and wage rates do not reflect changes in profit rgins or in productivity; implicit price indexes from gross fixed capital formation re- ting these factors are available from the National Income and Expenditure Division DBS.

-Price Indexes of Residential and Non-residential Building Materials and Wage Rates, 1956-69

(1961=100)

NOTE.—Figures from 1935 are available in the May 1970 issue of *Prices and Price Indexes*.

Year	Price Indexes of Building Materials		Construction Wage Rates	Composite Indexes of Materials and Wage Rates	
	Residential	Non-residential		Residential	Non-residential
	100.1	97.7	75.4	88.2	87.6
	100.1	99.2	79.9	90.4	90.6
	99.2	99.0	85.7	92.7	93.0
	101.3	100.5	91.1	96.4	96.3
	100.7	101.0	97.0	98.9	99.2
	100.0	100.0	100.0	100.0	100.0
	100.7	99.1	104.4	102.5	101.5
	104.1	101.8	108.1	106.0	104.6
	109.5	106.6	113.1	111.2	109.5
	115.8	111.5	118.6	117.1	114.7
	120.5	115.4	128.1	124.2	121.1
	125.3	117.8	140.8	132.8	128.2
	132.1	120.7	152.8	142.0	135.1
	139.2	126.1	164.5	151.4	143.3

Highway Construction Indexes.—The price indexes of highway construction in nada express prices paid by provincial governments each year in contracts awarded for hway construction as a percentage of price paid in 1961. The base-weighted indexes asure the effect of price change on the cost of specified programs of new highway con- uction represented by contracts of approximately $50,000 or more awarded by provincial ernments.

The all-items indexes and their components are useful in planning and budgeting for hway construction programs, in updating previously costed projects, in estimating

replacement cost of previously completed road work and in measuring historical price trend Prices contained in the index are for units of construction work put in place, such as a cub yard of earth excavation or a ton of bituminous hot-mix paving. Also included are pric of some materials, such as culvert pipe, usually supplied to the contractor by the highwa department. (*Prices and Price Indexes* for December 1967 contains details of the proble of estimating price change for highway construction.)

5.—Highway Construction Price Indexes for All-Items and Major Components, Seven-Province Composite, Years Ended Mar. 31, 1956-69

(1961=100)

Year Ended Mar. 31—	All-Items	Major Components		
		Grading	Granular Base Courses	Surface Courses
1956	131.6	139.1	126.1	126.1
1957	122.1	123.2	117.6	127.5
1958	111.1	114.3	105.2	114.8
1959	112.2	113.7	109.5	113.7
1960	110.6	113.1	104.5	116.1
1961	100.0	100.0	100.0	100.0
1962	103.7	107.6	97.6	106.2
1963	110.6	118.1	103.7	107.4
1964	113.5	118.6	109.6	109.8
1965	130.9	137.3	131.3	117.6
1966	140.1	147.3	140.1	126.0
1967	135.1	141.6	133.7	124.8
1968	132.9	140.6	129.5	123.4
1969	138.0	146.4	136.5	123.9

6.—Highway Construction Price Indexes, by Province, Years Ended Mar. 31, 1956-69

(1961=100)

Year Ended Mar. 31—	Newfoundland	Nova Scotia	New Brunswick	Ontario[1]	Manitoba	Saskatchewan	British Columbia
1956	136.2	115.1	99.9	134.2	133.1	152.5	142.4
1957	114.6	104.5	97.1	117.5	149.1	156.7	132.6
1958	130.3	103.7	103.2	109.2	111.5	121.5	111.6
1959	118.9	110.0	102.5	113.8	109.7	111.0	114.1
1960	124.7	118.4	96.8	107.2	116.4	105.3	113.7
1961	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1962	109.1	98.2	99.3	110.2	108.0	98.4	95.2
1963	101.1	95.9	102.2	126.5	120.2	102.7	96.9
1964	108.4	96.4	103.7	123.7	123.7	116.8	106.1
1965	119.5	116.8	103.2	144.0	133.3	144.4	127.7
1966	129.6	116.1	103.6	157.4	152.9	168.1	129.7
1967	115.2	122.7	103.0	156.3	153.8	137.6	119.4
1968	120.8	119.9	101.8	151.5	140.8	124.9	126.6
1969	116.5	123.1	102.2	154.0	144.6	132.1	143.2

[1] Direct comparisons should not be made between this index and the highway index published by the Ontar Department of Highways; the item content is substantially different.

Electrical Utility Construction Indexes.—The price indexes of electrical utilit construction, which include those of distribution systems, transmission lines and tran former stations, give some idea of the impact of price change on the cost of material labour and equipment used in constructing and equipping electrical utilities in a specifie base period. The index provides an estimate of how much more, or less, it would cost t reproduce the base-period program of construction in another period, using the same co struction technology as in the base period and assuming rates of profit and productivit in construction are the same in both periods.

Major uses of the index relate to the estimation of reproduction costs or the deflation capital formation. Fixed-weighted national input indexes have deficiencies for this urpose which may be alleviated by the use of detailed deflation techniques and through he utilization of specifically appropriate productivity adjustments. (These problems are iscussed in DBS Occasional Paper *Price Indexes of Electric Utility Construction*, Catalogue o. 62-526.)

Prices used in the indexes are, for the most part, selling prices reported monthly by anufacturers for materials or equipment. The price reported is for units and terms of le representative of the volume sales of the manufacturer. Federal sales tax changes e reflected in the index but no adjustments have been made for provincial tax changes. ntil December 1964, wage rate data were supplied by the Department of Labour and rep-sented minimum hourly rates paid to construction workers in major cities employed on ederal Government contracts. In 1965, union basic wage rates reported by major utilities id some contractors were incorporated into the index. The sample selected provides an timate of wage rate change for urban own-account and contract electrical utility con-ruction.

7.—Price Indexes of Electrical Utility Distribution Systems, Transmission Lines and Transformer Stations, 1956-69

(1961=100)

Year	Distribution Systems			Transmission Lines	Transformer Stations		
	Construction	Equipment	Total	Total	Structures and Improvements	Equipment	Total
56	92.7	100.4	95.1	92.1	110.1	127.9	115.2
57	91.9	106.6	96.5	94.4	105.6	132.6	118.1
58	93.5	92.5	93.2	95.7	101.3	118.4	109.0
59	96.3	97.9	96.8	97.0	102.6	123.2	113.5
60	98.5	104.3	100.3	98.9	103.3	115.7	109.8
61	100.0	100.0	100.0	100.0	100.0	100.0	100.0
62	102.5	100.4	101.8	100.9	102.6	105.1	104.5
63	105.2	96.4	102.5	102.3	109.0	106.7	107.2
64	107.7	97.6	104.6	102.7	113.1	111.5	111.7
65	112.3	95.4	107.1	108.5	124.4	117.9	118.7
66	118.4	99.0	112.4	113.0	131.4	122.1	123.7
67	125.3	95.7	116.1	118.7	125.2	117.4	122.5
68	126.3	91.8	115.6	121.9	122.9	107.2	117.3
69p	133.3	91.7	120.5	128.7	129.9	105.9	119.9

Section 3.—Consumer Price Index*

The purpose of the consumer price index is to measure the movement from month month in retail prices of goods and services bought by a representative cross-section of e Canadian urban population. For a particular article or service, a price index number simply the price of the article in one period of time expressed as a percentage of its price a reference period, usually called a base period. However, indexes for individual goods ay be combined to form indexes representing prices of broad groups of goods and services. hus, the consumer price index relates to the wide range of goods and services bought by anadian urban families. The index expresses the combined prices of such goods each onth as a percentage of their prices in the base period 1961.

The group of goods and services represented in the index is called the index "basket" id "weights" are assigned to the price indexes of individual items for purposes of com-

* A comprehensive description of the index is contained in the publication *The Consumer Price Index (1949=100) Revision Based on 1957 Expenditures* (Catalogue No. 62-518). A description of the change in the base period from 49 to 1961 appears in the January 1969 issue of *Prices and Price Indexes* (Catalogue No. 62-002).

bining them into an over-all or composite index. The weights reflect the relative impo tance of items in expenditures of middle-size urban families with medium incomes. Th basket is an unchanging or equivalent quantity and quality of goods and services. Onl prices change from month to month and the index, therefore, measures the effect of changin prices on the cost of purchasing the fixed basket. The basket and weights now used in th index are based on expenditures in 1957 of families of two to six persons, with annu incomes of $2,500 to $7,000, living in cities of 30,000 population or over.

8.—Consumer Price Index Numbers, 1946-69

(1961=100)

Year	Index	Year	Index	Year	Index	Year	Index
1946	60.0	1952	90.2	1958	96.8	1964	104.8
1947	65.6	1953	89.4	1959	97.9	1965	107.4
1948	75.0	1954	89.9	1960	99.1	1966	111.4
1949	77.4	1955	90.1	1961	100.0	1967	115.4
1950	79.6	1956	91.4	1962	101.2	1968	120.1
1951	88.0	1957	94.3	1963	103.0	1969	125.5

The behaviour of the consumer price index during the years of almost continuou economic growth following the end of the Second World War up to 1959 is discussed in th 1962 Year Book at pp. 928-929, and the movement during 1959-68 in subsequent editions Between 1968 and 1969, the annual consumer price index rose 4.5 p.c., marking the larges annual increase since the Korean War. In the five-year period ended 1969, the annua index advanced 19.8 p.c., which represented a drop of 16.5 cents in the purchasing powe of the consumer dollar.

The 4.5-p.c. rise in the index between 1968 and 1969 compares with an average in crease of 3.7 p.c. over the period 1964-69. Since 1964, the average annual increase of th two most important components—food and housing—paralleled closely the advance in th all-items index by rising, on average, 3.6 and 3.7 p.c., respectively. The other major com ponents registered five-year average increases of from 3.3 p.c. for clothing to 4.4 p.c. fo health and personal care.

9.—Consumer Price Indexes for Specific Groups, 1960-69

(1961=100)

Year	Food	Housing	Clothing	Transportation	Health and Personal Care	Recreation and Reading	Tobacco and Alcohol	Composite Index
Group weight as a percentage of total	27	32	11	12	7	5	6	100
1960	98.5	99.6	98.6	99.8	99.5	98.8	99.6	99.1
1961	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1962	101.8	101.2	100.9	99.9	102.0	100.8	101.3	101.2
1963	105.1	102.3	103.4	99.9	104.6	102.2	101.5	103.0
1964	106.8	103.9	106.0	101.0	108.0	103.9	103.4	104.8
1965	109.6	105.8	107.9	104.8	113.0	105.6	105.1	107.4
1966	116.6	108.7	112.0	107.3	116.5	108.6	107.6	111.4
1967	118.1	113.4	117.6	111.8	122.5	114.1	110.4	115.4
1968	122.0	118.6	121.1	114.7	127.4	119.7	120.4	120.1
1969	127.1	124.7	124.5	120.0	133.6	126.8	125.0	125.5

Between 1968 and 1969, annual average food prices rose 4.2 p.c., food at home increasing 4.0 p.c. and restaurant meals 6.8 p.c. The housing index advanced 5.1 p.c. over the same period, which was the largest of five progressive increases made by this component

nce 1964. Clothing, on the other hand, after registering a peak rate of increase of 5.0 p.c. tween 1966 and 1967, showed an annual rise of 3.0 p.c. in the subsequent years; its ad- nce of 2.8 p.c. between 1968 and 1969 was the smallest among the major components. he recreation and reading index advanced 5.9 p.c. between 1968 and 1969, which was the ghest rate of increase among the major components; health and personal care prices in- eased 4.9 p.c., transportation prices 4.6 p.c., and average tobacco and alcohol prices 8 p.c.

Table **10** gives single-commodity price relatives for a number of important items enter- g into the food component of the consumer price index.

10.—Urban Average and Relative Retail Prices of Staple Foods, 1960-69

(1961=100)

Year	Beef, sirloin, per lb.		Pork, rib chops, per lb.		Butter, creamery, per lb.		Eggs, "A", fresh, per doz.		Milk, fresh, per qt.	
	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative
	cts.		cts.		cts.		cts.		cts.	
60	97.7	100.6	69.8	95.9	69.8	99.8	54.5	96.8	23.7	100.8
61	97.1	100.0	72.8	100.0	69.9	100.0	56.3	100.0	23.5	100.0
62	107.4	110.5	74.9	102.9	62.1	88.7	53.2	94.5	23.6	100.3
63	103.7	106.8	74.4	102.3	58.5	83.6	58.4	103.7	23.8	101.5
64	99.9	102.8	73.1	100.3	58.9	84.3	50.7	90.1	24.7	104.7
65	106.6	109.7	81.4	111.9	61.4	87.8	54.3	96.5	25.0	106.4
66	116.7	120.1	91.0	125.1	67.1	95.9	64.1	113.9	26.8	114.0
67	123.7	127.2	85.1	116.9	70.4	100.7	54.1	96.2	29.0	123.4
68	126.5	130.1	88.2	121.1	70.9	101.5	55.6	98.8	30.7	130.5
69	135.4	139.3	102.4	140.8	72.2	103.0	61.8	109.9	32.2	137.1

Year	Flour, per lb.		Tomatoes, canned, 28-oz. tin		Potatoes, 10 lb.		Sugar, granulated, per lb.		Bread, per lb.	
	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative
	cts.		cts.		cts.		cts.		cts.	
60	8.8	97.4	27.8	102.8	58.0	121.4	9.4	98.0	15.6	98.0
61	9.0	100.0	27.0	100.0	47.8	100.0	9.6	100.0	15.9	100.0
62	9.8	109.4	26.6	98.7	47.3	99.1	9.5	99.6	16.4	102.9
63	10.3	114.4	27.1	100.4	51.4	107.7	15.7	163.9	17.2	108.1
64	10.8	121.0	31.5	116.6	59.6	124.7	14.1	147.5	18.1	113.4
65	10.9	122.0	34.5	127.8	76.7	160.6	9.8	102.9	18.1	113.6
66	11.4	127.2	35.8	132.8	64.0	133.9	9.5	99.5	19.0	119.5
67	11.8	131.7	35.5	131.7	56.1	117.3	9.4	97.6	19.0	119.8
68	12.0	133.5	33.9	125.7	62.7	131.3	9.4	98.7	19.6	123.3
69	12.1	134.3	34.1	126.7	58.8	123.1	10.9	113.0	19.8	123.8

Table **11** presents regional consumer price indexes for ten cities or city combinations. hese indexes do not show whether it costs more or less to live in one city than in another d should not be used for such comparisons. Their function is to measure percentage anges in retail prices—over a certain time in each city or city combination—of a fixed sket of goods and services representing the level of consumption of a particular group families. Indexes which compare price levels among major Canadian cities are shown p. 1063.

11.—Consumer Price Indexes for Regional Cities, 1960-69
(1961=100)

Year	St. John's, Nfld. (1951 =100)	Halifax, N.S.	Saint John, N.B.	Montreal, Que.	Ottawa, Ont.	Toronto, Ont.	Winnipeg, Man.	Saskatoon-Regina, Sask.	Edmonton-Calgary, Alta.	Vancouver B.C.
1960	99.0	99.0	99.2	98.9	98.8	99.4	98.5	99.2	99.3	99.7
1961	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1962	100.8	101.3	100.9	100.2	101.2	100.9	101.3	101.7	101.0	100.3
1963	102.8	102.3	102.5	102.9	102.9	102.6	102.2	102.5	102.1	101.9
1964	103.9	102.7	103.5	104.5	104.5	104.3	103.8	103.5	102.6	102.6
1965	105.5	104.6	105.1	106.7	106.3	106.9	106.1	105.2	104.1	104.5
1966	108.0	107.4	107.8	109.9	110.4	111.6	109.3	108.3	107.5	107.0
1967	110.9	109.9	111.1	114.2	113.1	114.9	113.3	111.3	111.8	111.0
1968	115.9	114.2	115.1	118.1	118.4	119.3	118.2	115.8	116.7	115.1
1969	119.3	119.5	119.8	121.8	123.1	124.1	123.1	119.7	121.5	119.0

World Retail Price Indexes.—In order to place movements in Canadian retail prices into perspective, they should be compared with price changes occurring elsewhere in the world. This is done in Table **12**, which indicates the percentage changes over the previous year in the consumer price index for each country specified. For purposes of comparison, countries are listed, alphabetically, by region. It should be noted that all percentages are rounded to the nearest whole number.

12.—Percentage Changes in Consumer Price Indexes in Canada and Other Countries, 1968 and 1969

SOURCE: *United Nations Monthly Bulletin of Statistics*, July 1970.

Country	Change over Previous Year		Country	Change over Previous Year	
	1968	1969		1968	1969
	p.c.	p.c.		p.c.	p.c.
North America—			Africa—		
Canada	**4**	**4**	Congo (Kinshasa)	53	14
Mexico (Mexico City)	2	3	Kenya (Nairobi)	—	—
United States	4	5	South Africa (European population)	2	3
South America—			Asia—		
Argentina (Buenos Aires)	16	8	Ceylon (Colombo)	6	7
Brazil (São Paulo)	24	23	India	3	1
Chile (Santiago)	27	31	Indonesia (Djakarta)	125	6
			Korea, Republic of	11	12
Europe—			Pakistan (Karachi)	—	3
Belgium	3	4			
Denmark (1964 = 100)	8	4			
France	5	6	Australasia—		
Germany, Federal Republic of	2	3	Australia	3	3
Greece	—	2	New Zealand	4	5
Ireland	5	7			
Netherlands	4	11	Middle East—		
Sweden	2	3	Iran	1	3
Switzerland	2	3	Israel	2	3
United Kingdom	5	5	Turkey (Istanbul)	6	4

Section 4.—Intercity Retail Price Differentials*

As noted on p. 1061, the regional city price indexes given in Table **11** measure the *movements* of consumer prices from month to month *within each city* and cannot be used to compare levels of prices between cities. Indexes that do compare levels of prices among 11

* A fuller explanation of the study from which these indexes were derived, including more details of the price comparisons, is given in the November 1969 issue of *Prices and Price Indexes*.

major Canadian cities are given in Table **13**. These indexes express prices in each city as a percentage of prices in Winnipeg at May 1969, with Winnipeg prices at that date set equal to 100. The selection of Winnipeg as the base city has no special significance; the indexes may be expressed on the base of any of the individual cities included. The selected commodity groupings shown make up about three quarters of the average urban consumer budget, the most important omissions, for technical reasons, being shelter (rented and owned), fuel, light and water, and restaurant meals.

The retail prices from which the indexes were derived are largely those collected in each city for production of the consumer price index. Comparability between cities was achieved by matching, as far as possible, quotations for similar qualities of goods and services and types of retail outlets. Since prices compared include sales and excise taxes as applicable, variations between provinces in the scale of sales taxes imposed on a wide range of non-food commodities can be of significance in explaining intercity price differentials for these items.

3.—Intercity Indexes of Retail Price Differentials for Selected Groupings of Commodities and Services, as at May 1969

(Winnipeg, May 1969=100)

Commodity Grouping	St. John's, Nfld.	Charlottetown, P.E.I.	Halifax, N.S.	Saint John, N.B.	Montreal, Que.	Ottawa, Ont.	Toronto, Ont.	Regina, Sask.	Edmonton, Alta.	Vancouver, B.C.
Food at home	108	101	102	102	95	100	96	101	99	101
Household operation[1]	..	113	112	..	110	106	106	100	100	112
Clothing	..	102	100	..	99	99	96	102	98	101
Transportation	..	..	103	..	109	101	102	100	99	101
Health and personal care	..	90	98	..	91	101	100	101	106	107
Recreation and reading	..	105	105	..	108	107	105	98	100	106
Tobacco and alcohol	123	105	109	..	100	95	95	100	89	94

[1] Excludes fuel and lighting.

Section 5.—Consumer Expenditure

Household surveys of family expenditure provide information on consumer spending that can be related to family characteristics, such as geographical location, family size, income level, etc. A primary purpose of such surveys is to provide information for constructing, reviewing and revising the weights of consumer price indexes. Initially, the small-scale sample surveys carried out in Canadian urban centres since 1953 were designed to follow changes in the spending patterns of a well-defined group of middle-income urban families known as the target group of the consumer price index. However, in the years from 1953 to 1968, during which seven survey programs were conducted, a growing demand for expenditure statistics to serve other needs of government, business, welfare organizations and academic research resulted in a widening in the scope and size of the surveys in recent years, and in a decision to expand the 1969-70 survey programs to provide a large-scale national survey for the first time since 1948-49.

The more restricted surveys (1953, 1955, 1957 and 1962) consisted of two phases—the collection by means of monthly record-keeping surveys throughout the reference year of detailed information on food expenditures, and the collection of information by annual recall of all family expenditure, income and change in assets and liabilities. In the other three surveys (1959, 1964 and 1967), the monthly surveys were omitted and the annual recall surveys were enlarged in scope to refer to all families and individuals, regardless of family type or income. The sample size was doubled in order to obtain about 2,000 usable annual records. The 1959 survey was unique in the series in that it was designed to represent population in all urban centres of 15,000 or over, whereas the 1964 and 1967 surveys were identical in city coverage, referring to 11 major regional cities.

Detailed results of the surveys have been published in two series of occasional publications covering food expenditure and all family expenditure, respectively: *Urban Family Food Expenditure 1962* (Catalogue No. 62-524), *Urban Family Expenditure 1962* (Catalogue No. 62-525), *Urban Family Expenditure 1964* (Catalogue No. 62-527), and *Urban Family Expenditure 1967* (Catalogue No. 62-530).

The family expenditure survey program undertaken for 1969 was national in scope, with considerably larger samples than previously. In monthly surveys throughout 1969, approximately 10,000 families and individuals kept detailed records of expenditures on food and selected non-food items, including quantities acquired. Early in 1970, the same time period was covered in an annual recall survey of all family expenditures and income. About 17,000 family records were obtained which are expected to yield at least 15,000 usable schedules. Both surveys will produce information for small urban, rural non-farm and farm populations as well as for the urban population and individual urban centres. Initial results are expected from the food expenditure survey in late 1970 and from the complete expenditure survey in late 1971.

Table **14** presents a summary of family expenditure patterns in 11 Canadian cities in 1967, classified by family income for families of two or more.

Camping is a ple and economical w spend a summer ho and therefore or the most popular of family recreati Canada. The ave expenditure of a f on recreation, re less of size of in and number of pe is estimated at a over $300 a ye

(Families of two or more persons)

Item	All Classes	Income Group											
		Under $2,500	$2,500-$2,999	$3,000-$3,499	$3,500-$3,999	$4,000-$4,499	$4,500-$4,999	$5,000-$5,499	$5,500-$5,999	$6,000-$6,499	$6,500-$6,999	$7,000-$7,999	$8,000-$9,999	$10,000 and Over
Family Characteristics—														
Families in sample....No.	1,768	63	44	42	44	61	63	79	87	107	115	217	319	527
Weighted percentage of families....	100.0	3.0	2.2	2.2	2.8	3.2	3.3	4.7	5.0	5.9	6.2	12.0	18.0	31.5
AVERAGE—														
Family size....No.	3.8	2.3	2.3	3.1	2.6	2.9	3.5	3.8	3.7	3.7	4.0	3.7	4.0	4.2
Adults, 65 and over.... "	0.2	1.0	1.2	0.6	0.5	0.3	0.3	0.1	0.2	0.1	0.1	0.2	0.1	0.1
Adults, 16-64.... "	2.3	0.9	0.8	1.5	1.6	1.8	1.9	2.1	2.0	2.1	2.2	2.1	2.4	2.7
Children under 16.... "	1.4	0.5	0.3	1.2	0.7	1.0	1.4	1.7	1.5	1.6	1.8	1.5	1.5	1.3
Age of head....yrs.	44.6	61.0	64.7	49.8	50.3	46.9	45.5	44.2	42.2	43.0	40.8	42.9	40.1	45.2
Money income before taxes.... $	9,061	1,867	2,716	3,221	3,752	4,260	4,737	5,259	5,738	6,249	6,748	7,512	8,916	14,784
Net change in assets and liabilities.... $	+507	−443	−367	−210	−300	−509	−100	−141	−279	−229	+595	+289	+240	+1,528
Earners....No.	1.6	0.3	0.4	0.7	1.1	1.1	1.0	1.3	1.3	1.4	1.3	1.5	1.8	2.0
Account balancing difference.... $	−65.3	−69.9	−198.2	−14.0	−239.2	−30.7	−88.5	−79.0	−167.0	−83.1	−268.3	−100.3	−20.1	+4.5
PERCENTAGE—														
Homeowners....	53	57	62	30	31	44	31	28	42	44	44	48	50	70
Car owners....	75	15	27	45	57	61	48	61	65	73	82	77	85	89
With children under 16....	59	24	17	49	36	46	62	65	64	68	71	60	67	59
With persons 65 and over....	15	65	67	38	30	25	22	12	17	9	10	12	7	11
Canadian-born....	72	63	57	68	63	68	77	76	62	73	81	75	73	72
Wife employed full time....	16	1	1	—	3	3	1	6	8	13	11	14	22	26
Average Dollar Expenditure—														
Food....	1,722	830	903	1,131	1,134	1,214	1,339	1,355	1,451	1,542	1,536	1,603	1,712	2,272
Shelter....	1,368	761	751	844	1,121	908	1,052	1,054	1,212	1,233	1,293	1,274	1,395	1,742
Rented....	*488*	*291*	*311*	*458*	*587*	*462*	*601*	*618*	*551*	*523*	*566*	*539*	*531*	*407*
Owned....	*550*	*252*	*230*	*180*	*316*	*269*	*235*	*206*	*411*	*397*	*457*	*444*	*551*	*870*
Other shelter....	*72*	*7*	*4*	*24*	*10*	*9*	*13*	*17*	*24*	*84*	*24*	*46*	*58*	*146*
Fuel, light, water....	*259*	*211*	*206*	*182*	*208*	*169*	*203*	*214*	*226*	*229*	*247*	*246*	*255*	*318*
Household operation....	349	128	145	178	233	245	204	232	246	264	273	280	344	526
Furnishings and equipment....	385	95	112	115	312	234	255	200	302	263	277	320	421	577
Appliances....	*101*	*16*	*43*	*30*	*78*	*64*	*47*	*83*	*92*	*65*	*59*	*107*	*112*	*141*
Other....	*284*	*79*	*69*	*85*	*234*	*170*	*208*	*117*	*210*	*198*	*218*	*213*	*309*	*436*
Clothing....	749	188	177	268	279	348	470	382	495	531	618	628	747	1,200
Transportation....	1,028	120	319	281	399	448	446	587	747	771	949	834	1,204	1,541
Car....	*838*	*46*	*252*	*182*	*260*	*289*	*360*	*442*	*626*	*648*	*846*	*704*	*1,021*	*1,234*
Purchase....	*366*	*3*	*160*	*14*	*58*	*60*	*134*	*198*	*286*	*317*	*440*	*286*	*488*	*518*
Operation....	*472*	*43*	*91*	*168*	*202*	*229*	*226*	*244*	*340*	*332*	*406*	*419*	*533*	*715*
Other transportation....	*190*	*74*	*68*	*99*	*139*	*160*	*87*	*145*	*121*	*122*	*104*	*130*	*183*	*308*
Medical care....	299	120	199	140	201	218	200	229	222	288	256	260	310	403
Personal care....	207	64	76	90	117	109	148	148	164	156	171	183	215	299
Recreation....	314	54	115	82	161	128	154	159	154	193	222	214	336	532
Reading....	59	23	24	25	32	32	37	50	38	42	64	54	57	84

14.—Patterns of Family Expenditure in Eleven Cities by Family Income, 1967—concluded

Item	All Classes	Income Group												
		Under $2,500	$2,500-$2,999	$3,000-$3,499	$3,500-$3,999	$4,000-$4,499	$4,500-$4,999	$5,000-$5,499	$5,500-$5,999	$6,000-$6,499	$6,500-$6,999	$7,000-$7,999	$8,000-$9,999	$10,000 and Over
Average Dollar Expenditure—concluded														
Education	79	2	2	18	30	43	24	38	31	68	27	74	62	146
Tobacco and alcoholic beverages	354	112	143	163	209	208	241	333	313	290	323	332	339	491
Other	118	120	67	82	152	175	42	71	114	78	98	81	100	168
Totals, Current Consumption	7,031	2,616	3,034	3,418	4,382	4,310	4,614	4,840	5,490	5,720	6,105	6,137	7,242	9,983
Gifts and contributions	212	99	194	121	67	109	105	90	106	109	146	160	167	378
Personal taxes	1,135	8	22	54	167	261	258	349	448	533	594	735	983	2,353
Security	453	18	47	85	124	177	208	241	244	309	315	340	435	804
Totals, Expenditure	**8,831**	**2,740**	**3,296**	**3,678**	**4,739**	**4,857**	**5,185**	**5,520**	**6,288**	**6,670**	**7,160**	**7,371**	**8,826**	**13,519**
Percentage Distribution—														
Food	19.5	30.3	27.4	30.8	23.9	25.0	25.8	24.5	23.1	23.1	21.5	21.7	19.4	16.8
Shelter	15.5	27.8	22.8	22.9	23.7	18.7	20.3	19.1	19.3	18.5	18.1	17.3	15.8	12.9
Rented	*5.5*	*10.6*	*9.4*	*12.5*	*12.4*	*9.5*	*11.6*	*11.2*	*8.8*	*7.8*	*7.9*	*7.3*	*6.0*	*3.0*
Owned	*6.2*	*9.2*	*7.0*	*4.9*	*6.7*	*5.5*	*4.5*	*3.7*	*6.5*	*6.0*	*6.4*	*6.0*	*6.2*	*6.4*
Other shelter	*0.8*	*0.3*	*0.1*	*0.7*	*0.2*	*0.2*	*0.3*	*0.3*	*0.4*	*1.3*	*0.3*	*0.6*	*0.7*	*1.1*
Fuel, light, water	*2.9*	*7.7*	*6.2*	*4.9*	*4.4*	*3.5*	*3.9*	*3.9*	*3.6*	*3.4*	*3.4*	*3.3*	*2.9*	*2.4*
Household operation	4.0	4.7	4.4	4.8	4.9	5.0	3.9	4.2	3.9	4.0	3.8	3.8	3.9	3.9
Furnishings and equipment	4.4	3.5	3.4	3.1	6.6	4.8	4.9	3.6	4.8	3.9	3.9	4.3	4.8	4.3
Appliances	*1.1*	*0.6*	*1.3*	*0.8*	*1.6*	*1.3*	*0.9*	*1.5*	*1.5*	*1.0*	*0.8*	*1.5*	*1.3*	*1.0*
Other	*3.2*	*2.9*	*2.1*	*2.3*	*4.9*	*3.5*	*4.0*	*2.1*	*3.3*	*3.0*	*3.0*	*2.9*	*3.5*	*3.2*
Clothing	8.5	6.9	5.4	7.3	5.9	7.2	9.1	6.9	7.9	8.0	8.6	8.5	8.5	8.9
Transportation	11.6	4.4	9.7	7.6	8.4	9.2	8.6	10.6	11.9	11.6	13.3	11.3	13.6	11.4
Car	*9.5*	*1.7*	*7.6*	*4.9*	*5.5*	*6.0*	*6.9*	*8.0*	*10.0*	*9.7*	*11.8*	*9.6*	*11.6*	*9.1*
Purchase	*4.1*	*0.1*	*4.9*	*0.4*	*1.2*	*1.2*	*2.3*	*3.6*	*4.5*	*4.8*	*6.1*	*3.9*	*5.5*	*3.8*
Operation	*5.3*	*1.6*	*2.8*	*4.6*	*4.3*	*4.7*	*4.4*	*4.4*	*5.4*	*5.0*	*5.7*	*5.7*	*6.0*	*5.3*
Other transportation	*2.2*	*2.7*	*2.1*	*2.7*	*2.9*	*3.3*	*1.7*	*2.6*	*1.9*	*1.8*	*1.5*	*1.8*	*2.1*	*2.3*
Medical care	3.4	4.4	6.0	3.8	4.2	4.5	3.9	4.1	3.5	4.3	3.6	3.5	3.5	3.0
Personal care	2.3	2.3	2.3	2.4	2.5	2.2	2.9	2.7	2.6	2.3	2.4	2.5	2.4	2.2
Recreation	3.6	2.0	3.5	2.2	3.4	2.6	3.0	2.9	2.5	2.9	3.1	2.9	3.8	3.9
Reading	0.7	0.8	0.7	0.7	0.7	0.7	0.7	0.9	0.6	0.6	0.9	0.7	0.6	0.6
Education	0.9	0.1	0.1	0.5	0.6	0.9	0.5	0.7	0.5	1.0	0.4	1.0	0.7	1.1
Tobacco and alcoholic beverages	4.0	4.1	4.3	4.4	4.4	4.3	4.6	6.0	5.0	4.3	4.5	4.5	3.8	3.6
Other	1.3	4.4	2.0	2.2	3.2	3.6	0.8	1.3	1.8	1.2	1.4	1.1	1.1	1.2
Totals, Current Consumption	79.6	95.5	92.1	92.9	92.5	88.7	89.0	87.7	87.3	85.8	85.3	83.3	82.1	73.8
Gifts and contributions	2.4	3.6	5.9	3.3	1.4	2.2	2.0	1.6	1.7	1.6	2.0	2.2	1.9	2.8
Personal taxes	12.9	0.3	0.7	1.5	3.5	5.4	5.0	6.3	7.1	8.0	8.3	10.0	11.1	17.4
Security	5.1	0.7	1.4	2.3	2.6	3.6	4.0	4.4	3.9	4.6	4.4	4.6	4.9	5.9
Totals, Expenditure	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Section 6.—Security Price Indexes

Security price indexes measure, through time, the effect of price change on the value a portfolio of stocks bought and held by a hypothetical investor (as opposed to the re speculative trader). The portfolio represents stocks of Canadian companies listed the Toronto, Montreal and Canadian stock exchanges. In the case of the mining ex, eligible issues are for producing mines only. The number of shares held for each ue is in proportion to the total number of shares outstanding. Prices in the common ck indexes (investors and mining indexes) are Thursday's closing quotations each week, eraged over weeks. For the monthly preferred stock indexes, prices are monthly weighted erages of the daily closing prices in which weights are daily total sales. The indexes press current prices as a percentage of prices in 1961. Monthly and certain weekly in-xes appear in the DBS monthly publication *Prices and Price Indexes* (Catalogue No. 002) and a weekly DBS report gives indexes on a weekly basis for all groups and sub-ups.

The investors index is comprised of three major groups, with relative importance icated by percentage weights as follows: industrials, 67.5; utilities, 18.6; and finance, 9. Each major group is further divided into industry sub-groups corresponding to the ndard industrial classification. The mining index is composed of two groups: base tals with a weight of 64.6 p.c. and golds with a weight of 35.4 p.c. The index of pre-red stocks is not divided into component groups.

15.—Index Numbers of Common and Preferred Stocks, 1961-70

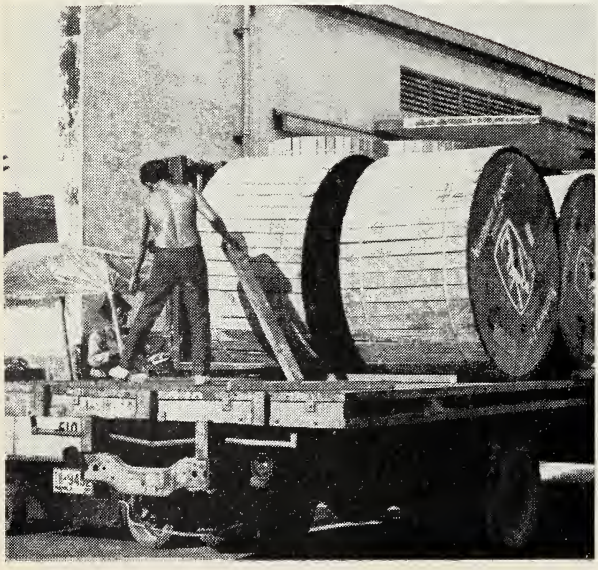
(1961=100)

Year and Month	Investors Index				Mining Index[1]	Preferred Stocks[1]
	Total	Industrials	Utilities	Finance		
.....	100.0	100.0	100.0	100.0	100.0	100.0
.....	96.4	96.6	97.9	94.3	103.7	101.5
.....	103.1	103.4	108.1	96.4	98.3	104.6
.....	120.8	125.9	122.2	98.9	109.3	105.8
.....	132.8	139.8	136.3	100.7	122.5	105.1
.....	125.3	132.9	129.4	89.9	121.1	94.1
.....	131.3	140.4	133.4	92.4	110.9	89.9
.....	135.2	143.7	131.8	104.1	119.5	79.9
.....	149.8	157.7	142.0	126.4	127.3	77.3
January.....	150.0	162.2	127.4	124.8	124.8	73.3
February.....	147.1	159.4	122.9	123.6	121.5	71.7
March.....	150.3	162.6	125.7	127.2	124.3	70.9
April.....	146.1	158.2	124.0	121.1	124.1	70.2
May.....	128.3	136.8	114.3	108.8	110.8	64.2
June.....	126.1	132.1	115.8	113.4	107.0	64.1
July.....	125.4	131.2	117.6	110.4	107.0	63.7
August.....	129.0	134.3	123.8	112.7	107.4	64.9
September.....	134.6	139.4	130.6	119.4	108.5	66.5
October.....	137.2	142.3	134.2	118.8	113.1	66.9
November.....	135.5	140.1	135.6	115.7	108.7	66.3

[1] Not included in Investors Index.

Wire ingots from a Columbia aluminum being unloaded at Japan.

Canadian telephone cable being used in Manila. "Communications equipment and parts" is second in importance among Canadian exports to the Philippines, the most valuable item being "Motor vehicles and parts".



Although Hong Kong regards Canad a supplier of raw and semi-fin materials, a much broader mark being developed there for fin products such as garments, foods pharmaceuticals, cosmetics and scie instruments.

CHAPTER XXII.—FOREIGN TRADE

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

The subject of foreign trade covers more than the treatment of exports and imports commodities, important though this is. In its broader sense, foreign trade is made up of e total international interchange of goods, services, securities and other financial transacns, all of which are presented in their appropriate relationship in this Chapter and in ction 4 of Chapter XXIV. Part I contains specially prepared information on Canada's de with the Pacific Rim Countries. Part II gives detailed statistics of total foreign trade. rt III outlines the various ways in which the Federal Government promotes and en urages trade relationships, and contains a brief review of the Canadian tariff structure. rt IV contains a review of the extent of travel between Canada and other countries in 69, with estimates of the amount of money expended for that purpose.

PART I.—CANADA'S TRADE WITH THE PACIFIC RIM COUNTRIES*

The "New West", as Prime Minister Trudeau has called the Pacific Rim† area, has erged as one of primary interest in Canada's trade. The Federal Government's recent ite paper on foreign policy places as much emphasis on the Pacific as on Latin America.

Canada has been experiencing shifts in trading partners in recent decades, as a result of fering rates of economic growth, the alignment of countries into regional trading blocs d the evolution of transportation facilities such as air freighters, bulk carriers and conerization. The major shift has been toward expansion of Pacific trade. Even though s should greatly broaden Canada's trade in the 1970s and provide balance and outlets for

* Prepared by Dr. M. P. Mathew, External Trade Division, Dominion Bureau of Statistics.

†"Pacific Rim", as defined here, includes all the countries in East Asia, Southeast Asia and Oceania, but excludes United States, the Soviet Union and Latin America which border on the Pacific Ocean.

more of its products, Pacific trade involves several important facets to be considere First, it involves products requiring specifications different from those Canada is accusto to produce for the North American and European markets. Secondly, there are two k of customer countries—those which are industrializing rapidly and have consumers v rising incomes and new tastes to satisfy, and those which require food but have shrinl opportunities for trade owing to inadequate resources and products. Thirdly, there customers like the People's Republic of China, the requirements of which fluctuate gre because of such factors as internal crop conditions or trading and political considerati

Half the world's population borders on the Pacific Ocean. The world's fastest grow country (Japan) and its most populous country (China) are members of the Pacific l A growing and balanced trade means prosperity, independence, stability and impro quality of life in the whole region. Trade between Canada and the Pacific area has incre phenomenally during the past decade (Tables 1 and 2) and that area is now Canada's t largest market, after the United States and Western Europe, and its third largest supp Canada has also been an important net direct investor in the region, having invested s $500,000,000 more there than Pacific investors have placed in Canada.†

In the period following the conclusion of World War II, Canada, particularly Wes Canada, has benefited from growing merchandise trade with the Pacific area, especi with Japan. Of the 54 principal commodities of Canada selling in Japan in 1969, w accounted for some 93 p.c. of Canada's exports to that country, as many as 48 were marily of western Canadian origin. A similar development has occurred in trade v certain other Pacific countries.

The value of exports to the Pacific countries in 1969, at $1,100,000,000, was do that of 1962 and represented 7 p.c. of Canada's total exports; imports at $857,000,000 w more than double the value in 1965. The favourable balance provided foreign excha with which to offset Canada's payments deficits with the rest of the world, especially United States. Canada is an important supplier of foodstuffs needed by countries v rapidly growing populations, and also in recent years of industrial materials and cap goods. Sales of wheat and wheat flour continue to dominate export figures, followed such raw materials as copper, aluminum, wood pulp, newsprint and lumber. Japan t the major portion of these exports in 1969, followed by Australia, the People's Republi China, New Zealand, the Philippines, Hong Kong, Malaysia, South Korea and Taiwa

Canadian trade relations with several Pacific Rim countries—Japan, Hong Kong South Korea—are governed by the General Agreement on Tariffs and Trade (GAT In addition, Canada has bilateral agreements with Japan and South Korea providing the exchange of most-favoured-nation (MFN) treatment, but the latter maintains con on many imports. In Japan, licences are required for most imports and quota restricti are maintained on a substantial group of items. Canada grants MFN facilities to H Kong and receives preferential treatment on a small range of products, but imports i Hong Kong are admitted relatively freely. A *modus vivendi* signed in 1946 governs Cana trade relations with the People's Republic of China. Canada's trade with Australia New Zealand is governed by the Commonwealth preference system. Canada and Philippines provide MFN treatment to each other without any contractual agreem Although the Philippines import regulations are quite liberal, credit restrictions are exten and provide an effective barrier to imports. From one Pacific country to another, composition of Canadian exports and imports, the opportunities for their growth, and problems of access tend to vary widely. Canada's trade relations and the exchang important commodities with the individual countries of the region are discussed bel Canada's principal exports and imports to and from the region as a whole are giver Tables 3 and 4.

*T. S. Rackham, "World Agricultural Trade and Merchandising Opportunities in the 1970's", *Canadian Jour Agricultural Economics*, 18 (February 1970), 36-44.

†*Pacific: Foreign Policy for Canadians* (Ottawa: Information Canada, 1970), p. 14.

1.—Total Exports to the Pacific Rim Countries, 1960-69

(Millions of dollars)

Country[1]	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Japan	179.5	232.4	215.6	297.9	332.2	317.2	394.9	574.0	608.2	626.2
Australia	99.8	79.4	106.5	101.7	149.6	143.6	119.2	161.4	191.5	168.6
People's Republic of China	8.9	125.4	147.4	104.7	136.3	105.1	184.9	91.3	163.2	122.4
New Zealand	24.2	31.4	27.2	31.1	34.1	37.2	42.1	41.3	32.4	37.8
Philippines	16.6	15.8	18.7	21.5	28.5	26.8	18.8	25.6	34.8	32.5
Hong Kong	22.3	19.9	14.6	17.7	22.7	17.0	15.9	17.9	17.0	18.6
Malaysia	5.1[2]	6.2[2]	6.0[2]	7.1[2]	8.4[2]	9.6[2]	15.9[2]	14.0	11.1	16.0
Korea	3.9	2.1	1.5	3.8	1.1	1.0	15.7	7.8	13.2	15.7
Taiwan	2.9	2.2	4.5	3.8	6.2	6.7	8.5	12.7	17.0	12.7
Thailand	2.7	3.0	3.5	2.9	3.8	5.7	6.8	7.0	7.2	8.7
Singapore	[3]	[3]	[3]	[3]	[3]	[3]	[3]	2.9	3.2	5.0
Indonesia	2.2	2.6	2.1	1.5	0.9	1.7	0.4	2.9	2.5	3.1
Viet-Nam	0.5	0.2	0.3	0.3	0.8	0.8	2.6	1.9	2.2	2.1
U.S. Oceania	0.6	1.3	3.1	3.7	1.3	0.9	0.7	0.8	1.0	1.9
Burma	0.9	1.4	1.4	0.7	0.8	0.7	1.2	0.5	0.8	1.5
Fiji	0.8	0.6	0.7	0.8	0.9	1.1	0.8	0.9	0.9	0.9
French Oceania	0.3	0.3	0.4	0.3	0.4	0.5	0.6	1.2	1.7	0.7
Cambodia and Laos	0.2	0.1	--	--	--	0.2	0.1	--	--	0.2
British Oceania	0.3	0.2	0.3	0.3	0.4	0.3	0.3	0.2	0.2	--
Totals, to Pacific Rim Countries	**371.7**	**524.6**	**553.7**	**599.6**	**728.4**	**676.1**	**829.4**	**964.0**	**1,108.4**	**1,074.8**
Totals to All Countries	5,386.8	5,895.2	6,347.7	6,980.1	8,303.4	8,766.7	10,325.3	11,420.0	13,605.0	14,869.2
Percentages to Pacific Rim Countries	6.9	8.9	8.7	8.6	8.8	7.7	8.0	8.4	8.1	7.2

[1] Listed in order of rank in 1969. [2] Includes Singapore. [3] Included with Malaysia.

2.—Imports from the Pacific Rim Countries, 1960-69

(Millions of dollars)

Country[1]	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Japan	110.4	116.6	125.4	130.5	174.4	230.1	253.1	304.8	360.2	495.7
Australia	35.5	36.6	45.2	55.7	59.8	47.4	59.6	64.5	76.0	96.3
Hong Kong	15.5	14.1	18.9	21.2	26.3	31.0	38.9	51.0	58.4	72.9
Taiwan	1.2	1.9	2.9	5.9	9.1	9.3	13.1	23.6	34.4	42.5
New Zealand	10.1	10.5	12.0	14.1	14.1	14.9	15.0	15.3	18.6	41.2
Malaysia	28.4[2]	23.9[2]	28.3[2]	31.6[2]	34.6[2]	40.3[2]	41.5[2]	22.3	26.0	32.8
People's Republic of China	5.6	3.2	4.5	5.1	9.4	14.4	20.6	25.1	23.4	27.4
Singapore	[3]	[3]	[3]	[3]	[3]	[3]	[3]	11.2	15.1	22.0
Korea	0.4	0.1	0.1	0.4	0.5	1.5	1.8	4.6	11.2	12.2
Fiji	6.5	2.5	3.1	8.6	7.4	4.8	2.7	3.8	3.6	5.7
Philippines	2.0	1.5	1.4	2.0	3.0	3.6	3.3	3.1	2.8	4.5
French Oceania	--	--	--	--	3.6	5.1	6.6	6.1	7.5	2.8
Thailand	0.8	0.6	1.0	0.6	0.6	0.9	2.4	4.9	2.0	1.0
Indonesia	0.5	0.3	0.2	0.2	1.4	2.4	1.2	1.1	0.4	0.3
Burma	--	--	--	0.1	0.3	--	0.1	0.1	--	--
U.S. Oceania	--	--	0.2	--	--	0.1	--	0.1	0.1	--
Viet-Nam	--	--	--	--	--	--	--	--	--	--
Cambodia and Laos	--	--	--	--	--	--	--	--	--	--
British Oceania	--	--	--	--	--	--	--	--	--	--
Totals, from Pacific Rim Countries	**217.0**	**212.0**	**243.3**	**275.9**	**344.4**	**405.9**	**459.9**	**541.3**	**640.0**	**857.4**
Totals from All Countries	5,482.7	5,768.6	6,257.8	6,558.2	7,487.7	8,633.1	9,866.4	11,075.2	12,358.0	14,201.6
Percentages from Pacific Rim Countries	4.0	3.7	3.9	4.2	4.6	4.7	4.7	4.9	5.2	6.0

[1] Listed in order of rank in 1969. [2] Includes Singapore. [3] Included with Malaysia.

3.—Principal Domestic Exports to the Pacific Rim Countries, 1960-69

Commodity[1]	1960	1961	1962	1963	1964
	$'000	$'000	$'000	$'000	$'000
Wheat	86,076	192,376	236,701	215,345	242,332
Copper in ores, concentrates and scrap	8,914	5,945	23,479	34,379	39,232
Wood pulp	9,449	11,216	12,206	26,591	28,595
Aluminum including alloys	30,135	26,024	21,262	18,575	22,344
Newsprint paper	25,479	22,437	17,684	16,700	34,229
Lumber	12,234	20,471	19,991	33,011	30,127
Asbestos, unmanufactured	13,099	16,838	14,092	14,071	17,998
Rapeseed	4,884	2,221	4,894	12,259	7,398
Iron ores, concentrates and scrap	14,859	25,721	16,806	26,886	23,870
Sulphur, crude or refined	—	296	851	2,474	5,502
Flaxseed	9,406	14,470	11,369	13,565	12,244
Fertilizers and fertilizer materials	1,274	1,196	1,233	6,605	9,920
Nickel in ores, concentrates and scrap	728	3,179	2,501	3,375	3,683
Communication and related equipment	563	1,881	2,838	1,509	1,077
Zinc in ores, concentrates and scrap	101	63	15	515	3,510
Totals	**217,201**	**344,334**	**385,922**	**425,860**	**482,061**

	1965	1966	1967	1968	1969
	$'000	$'000	$'000	$'000	$'000
Wheat	210,701	305,981	200,583	259,173	241,309
Copper in ores, concentrates and scrap	36,484	56,514	99,759	117,952	133,517
Wood pulp	35,847	40,863	49,537	60,102	76,117
Aluminum including alloys	19,904	24,909	61,849	59,664	74,075
Newsprint paper	27,431	28,504	36,601	46,772	55,305
Lumber	27,795	32,006	49,697	61,581	55,117
Asbestos, unmanufactured	18,150	19,290	24,414	25,183	34,699
Rapeseed	12,913	21,380	27,065	29,242	25,985
Iron ores, concentrates and scrap	20,413	19,333	22,419	21,524	25,823
Sulphur, crude or refined	8,461	10,007	17,785	25,722	21,954
Flaxseed	13,413	14,618	13,822	14,798	19,168
Fertilizers and fertilizer materials	13,842	13,944	14,262	19,101	18,325
Nickel in ores, concentrates and scrap	3,207	2,624	13,468	14,432	11,772
Communication and related equipment	1,195	1,024	7,205	7,141	9,977
Zinc in ores, concentrates and scrap	798	2,670	9,702	12,080	9,271
Totals	**450,554**	**593,667**	**648,168**	**774,467**	**812,414**

[1] Listed in order of rank in 1969.

4.—Principal Imports from the Pacific Rim Countries, 1960-69

Commodity[1]	1960	1961	1962	1963	1964
	$'000	$'000	$'000	$'000	$'000
Apparel and apparel accessories	28,665	24,644	24,435	22,758	28,499
Communication and related equipment	7,803	9,357	9,281	10,437	13,084
Road motor vehicles and parts	324	455	631	1,072	4,262
Meat and meat preparations	9,426	13,622	16,901	21,622	15,508
Textile fabricated materials	14,605	12,841	17,652	21,319	31,013
Plate, sheet and strip, steel	2,510	2,998	3,250	5,148	6,925
Plywood and veneers	4,023	4,871	6,863	6,223	10,712
Crude natural rubber (excl. latex)	20,403	13,117	17,730	16,285	15,423
Fruits and fruit preparations	12,317	12,487	13,919	17,007	19,253
Non-farm machinery	1,177	1,126	1,875	2,864	2,708
Raw sugar	19,196	14,669	14,927	26,140	25,541
Footwear	6,600	7,761	7,302	7,355	8,242
Games, toys and children's wagons	4,555	4,476	5,082	5,776	8,187
Tin blocks, pigs and bars	4,327	4,009	4,030	8,669	14,464
Photographic goods	3,579	3,809	3,884	3,477	4,860
Totals	**139,510**	**130,242**	**147,762**	**176,152**	**208,681**

[1] Listed in order of rank in 1969.

4.—Principal Imports from the Pacific Rim Countries, 1960-69—concluded

Commodity[1]	1965	1966	1967	1968	1969
	$'000	$'000	$'000	$'000	$'000
pparel and apparel accessories	36,648	45,081	61,374	85,512	102,094
ommunication and related equipment	19,020	23,081	37,768	52,793	79,763
oad motor vehicles and parts	16,951	14,342	13,005	32,164	71,620
eat and meat preparations	12,834	21,018	23,295	29,752	65,589
extile fabricated materials	34,341	34,440	45,527	53,665	58,166
ate, sheet and strip, steel	17,312	13,708	11,804	11,402	28,977
ywood and veneers	9,139	12,037	16,585	17,582	23,524
rude natural rubber (excl. latex)	14,745	17,045	12,257	13,756	22,941
ruits and fruit preparations	19,685	20,337	20,974	22,371	21,954
on-farm machinery	4,715	8,408	13,025	15,729	21,407
aw sugar	10,996	9,121	11,073	9,931	20,752
ootwear	7,858	9,660	11,503	15,187	17,575
ames, toys and children's wagons	9,348	9,130	10,624	12,864	15,072
n blocks, pigs and bars	18,503	13,604	14,222	11,449	13,194
notographic goods	6,291	7,247	10,709	10,675	13,003
Totals	**238,386**	**258,259**	**313,745**	**394,832**	**575,631**

[1] Listed in order of rank in 1969.

ast Asia

Japan.—A notable development in the Canada–Pacific Rim trade has been the growth the Japanese market. Immediately following World War II, Japan's trade was preonderantly with the United States. In the 1960s, however, that country turned more nd more to Canada, becoming third in importance to Canadian exporters, after the United tates and the United Kingdom. Even though Japan is Canada's largest market and pplier in the Pacific, Canadian sales to that country are limited to industrial raw materials nd foodstuffs, while finished goods make up the bulk of Japanese sales to Canada. A large roportion of the shipments of unprocessed materials is derived from direct Japanese inestment, particularly in Western Canada, where more than $100,000,000 has been invested ensure sources of supply for rapidly growing industry. Work is also being done in lberta to foster economic co-operation in the development of coal, copper and other ommodity resources. Although this investment is advantageous to the development of anadian resources, it still involves the export of these materials in the crudest and leastrofitable form.

Domestic exports to Japan rose 250 p.c. from $179,000,000 in 1960 to $626,000,000 in 969, and imports rose 350 p.c. from $110,000,000 to $496,000,000. Canada's access to ie Japanese market for manufactured goods, as well as opportunities for investment, is nited by a broad range of direct and indirect restrictions, notwithstanding a movement ward liberalization in stages. Further efforts are required to lower or remove the existing on-tariff barriers to Canadian manufactures and to open up fully opportunities for Canaan investment. In the meantime, Japan's demand for all types of goods, especially dustrial raw materials, continues to grow. Shipments of many Canadian goods rose gnificantly in 1969, particularly of commodities such as flaxseed, copper, aluminum, iron e, wood pulp and newsprint.

Japan must import much of the raw materials required by industry and prefers, like ie United Kingdom at a similar stage of economic development, to import these in the udest possible form. In consequence, basic foodstuffs (mostly grains) and unprocessed aterials (ores, fuels and forest products) have accounted for something like 94 p.c. of anada's exports to Japan in recent years. Minerals alone accounted for 42 p.c. of total mmodity shipments in 1969 of $626,000,000 to Japan, compared with 26 p.c. a decade go. The rise in mineral exports to Japan contrasts with the diminished importance of anadian grain shipments—13 p.c. in 1969 against over 40 p.c. ten years previously.

Canada's relative proximity to Japan and the construction of new port facilities a encouraging low-cost bulk commodity exports, and Canadian political and econom stability has encouraged Japanese customers to enter into long-term contracts for the d velopment and supply of mineral resources.

At $133,000,000, following a 21-p.c. rise over 1968, copper concentrates represente the largest single commodity in Canadian exports to Japan in 1969. It should be noted th while Canadian copper exports to the Japanese market showed a sixfold increase in valu from $20,000,000 in 1962, they rose by considerably less than three times in volume, ind cating a more than doubling in the price of copper during the 1962-69 period.* The sha of Canada's total copper production that is shipped to Japan almost doubled during th 1962-69 period from 10 p.c. to nearly 20 p.c. Despite the increase in projected copp exports to $570,000,000 (350,000 tons) by 1973, it is expected that Canada will still ran second in importance to the Philippines. In addition to copper, Canada also supplie 40 p.c. of Japan's requirements of zinc concentrates as well as substantial quantities molybdenum, uranium, iron ore, lead and aluminum.

Impressive improvements in the standard of living are changing Japan from tradition to contemporary consumption patterns. For example, the per capita rice consumptio dropped from over 200 lb. in 1960 to 160 lb. in 1969, but that of fruits and vegetables an prepared foods increased considerably and bread has become an important consumptio item. Thus, Japan has recently had a surplus of home-grown rice and has had to impo 15 p.c. more food yearly. In addition, internal production of some agricultural commod ties like rapeseed is being abandoned in favour of imports. During the past decad Canada's three largest agricultural product markets—the United Kingdom, the Unite States and the European Economic Community—grew little, whereas exports to Japa doubled and those to other countries tripled.† Currently, annual exports of agricultur products to Japan are only slightly behind those to the United States and are well ahead o those to the EEC. Wheat and flour exports going to that country have amounted t almost $100,000,000 yearly for several years and it has become Canada's leading market fo rapeseed and flaxseed; 300,000 tons of rapeseed were shipped to Japan in 1969, a tenfol increase in the decade. Japan's per capita meat consumption, including poultry, whil still less than 30 lb. a year, is rising rapidly so that, because of its limited supply of arabl land, the importation of large quantities of feed grains will become necessary. Canad already an important supplier of barley, has an opportunity to expand its exports of tha grain in competition with other producers such as France. Prospects also exist for in creased shipments of Canadian beef and pork.

Canada has become one of Japan's fastest growing overseas markets, increasing 38 p.c in 1969 over 1968. As stated previously, almost all major Canadian exports to Japan t date have been primary commodities and imports have been mostly processed goods, in cluding capital equipment for the power and oil industries, commodities for transportatio requirements, and consumer goods. The wide variety of manufactured goods importe from Japan in 1969 included: communication and related equipment, $74,600,000 ($7,700,00 in 1960); motor vehicles and parts, $71,400,000 ($300,000); textile materials, $51,900,00 ($14,800,000); iron and steel products, $45,200,000 ($6,400,000); apparel and accessories $31,600,000 ($20,300,000); non-farm machinery, $19,900,000 ($1,000,000); photographi goods, $12,200,000 ($3,400,000); plywood, $9,100,000 ($3,500,000); footwear, $8,300,00 ($5,700,000); games and toys, $7,300,000 ($4,000,000); and sporting and recreation goods $7,100,000 ($1,300,000).

Although total imports into Canada from all countries increased 159 p.c. from 196 to 1969, those from Japan rose 349 p.c. from $110,400,000 to $495,700,000; automotive

* The Canada–Japan Trade Council, *Canadian Minerals and the Japanese Market* (Ottawa: 1970), p. 3.

†*Canadian Agriculture in the Seventies*, Report of the Federal Task Force on Agriculture (Ottawa: Informatio Canada, 1969), p. 46.

ducts and equipment showed the most spectacular increase. Canada has had a sub-ntial trade balance with Japan for many years, rising irregularly from $69,000,000 in 0 to $130,000,000 in 1969.

The People's Republic of China.—Foreign trade, a monopoly of the State, is ducted through China's 13 State trading corporations. In recent years, China, with opulation of 750,000,000, has been a major market for Canadian wheat under a long-term eement which came into force in August 1966. In 1968, sales of $158,000,000 represented p.c. of Canada's total wheat exports, and in 1969 wheat accounted for over 98 p.c. of nada's total exports to China. While the Canadian Wheat Board concluded a contract ate 1969 for the sale of 2,200,000 tons for delivery up to October 1970, valued at approxi-ely $135,000,000, the outlook for continued sales beyond 1970 is difficult to assess on ount of dramatic advances in China's agricultural productivity. Other commodities orted to China in 1969 were scrap iron and steel, totalling $2,000,000.

Canada's imports from the People's Republic of China amounted to only $27,000,000 969 and consisted of a wide range of products including: apparel and accessories, 200,000 ($200,000 in 1960); green peanuts, $4,600,000 ($300,000); house furnishings, 300,000 ($600,000); cotton fabrics, $2,800,000 ($45,000); and walnuts, $2,500,000 700,000). Thus, the favourable trade balance with the People's Republic rose from 000,000 in 1960 to $95,000,000 in 1969.

Korea.—The South Korean economic boom which continued in 1969 was reflected reater demand for imports. Even though the internal economy has been under restraint some time, the real growth rate in gross national product exceeded 15 p.c. Although United States and Japan continue to be the main suppliers to South Korea, Canadian s have risen considerably in the past few years from $7,800,000 in 1967 to $13,200,000 968 and $15,700,000 in 1969. The major exports in 1969 were: sulphur, $4,600,000; estos, $3,000,000; potassium chloride, $1,800,000; pulp and cattle, $1,500,000 each; and sprint $450,000. Imports from South Korea also increased from $4,600,000 in 1967 $12,200,000 in 1969. The latter included: apparel and footwear $7,800,000; textile ics, $1,500,000; plywood, $600,000; tungsten, $300,000; and transistor radios, $200,000. ada's trade balance with South Korea improved from $2,000,000 in 1968 to $3,500,000 969. Trade with North Korea has been marginal; exports, mostly of pig iron, amounted nly $253,000 in 1969.

Taiwan.—Bolstered by heavy foreign investment and energetic drive, the industriali-on and real economic growth of Taiwan, with its highly concentrated population of 00,000, ranked among the highest in the world in the postwar period. As a consequence, nternational trade expanded rapidly. At present, food processing, textiles and elec-ics are the key sectors of the economy. Canada's trade with Taiwan is buoyant in lstuffs, raw materials, certain manufactures and capital equipment. Of the total orts to Taiwan of $12,700,000 in 1969 ($2,900,000 in 1960), sulphur accounted for 00,000; wheat, $2,000,000 ($100,000 in 1960); rapeseed and wood pulp, $1,500,000 each; aluminum $500,000. There were substantial exports of potash in 1967 and 1968.

Of the total imports from Taiwan of $42,500,000 in 1969 ($1,100,000 in 1960), veneer plywood accounted for $12,600,000 ($300,000); apparel and accessories, $12,000,000 0,000); footwear, $5,500,000; canned vegetables, $2,500,000; and communications and ed equipment, $2,400,000.

Generally, throughout the 1960s, Canada has had an unfavourable trade balance with wan, the mounting deficit reaching nearly $30,000,000 in 1969.

Hong Kong.—Essentially a free port with no tariffs except on liquor, tobacco, petro-n products and motor vehicles, Hong Kong with its population of 4,000,000, has enjoyed d indu strial expansion and a profitable tourist trade.

The pattern of Canada's trade with Hong Kong is somewhat similar to that w Taiwan, providing growing opportunities for Canadian exports as well as problems w respect to the importation of textiles, which continue to rank among the colony's m important manufactures. Canada had a trade surplus with Hong Kong in 1961 and 19 but has since been running a deficit which amounted to $54,000,000 in 1969. Canad exports to Hong Kong ranged between $17,000,000 and $19,000,000 in the three ye 1967-69, somewhat below the level of $22,000,000 in 1960. The principal exports inclu wheat and flour, aluminum, newsprint, plastic materials, pharmaceutical products a medicinal plants.

Imports in 1969, valued at $72,900,000 against $15,500,000 in 1960, included: appa and accessories, $34,200,000 ($7,600,000 in 1960); toys, games and dolls, $7,000,0 ($500,000); communication and related equipment, $2,300,000 ($100,000); cotton fabri $2,100,000 ($41,000); artificial and ornamental flowers, $1,900,000 ($33,000); footw $1,800,000 ($900,000) and jewellery, $1,600,000 ($100,000).

Oceania

Australia.—Trade between Canada and Australia is based on the Canada–Austra Trade Agreement of 1960. There are no major barriers to trade, both countries admitti specified goods at preferential rates of tariff. In the past decade, the course of total tra has been characterized by growth—nearly doubling from $135,000,000 in 1960 to $265,00 000 in 1969.

Exports to Australia, Canada's second largest market in the Pacific area, grew by average of 6½ p.c. a year over the decade. Domestic exports in 1969 amounted to $168,6 000 and imports to some $96,000,000, compared with $99,800,000 and $36,000,000, spectively, in 1960. Nearly 85 p.c. of the 1969 exports represented manufactured a semi-manufactured goods, the principal items being: motor vehicles and parts, $30,700,0 newsprint, $22,300,000; lumber, $15,800,000; non-farm machinery, $13,500,000; wo pulp, $9,300,000; asbestos, $7,800,000; sulphur, $7,400,000; aircraft and parts, $4,700,0 nickel and alloys, $3,100,000; plastics, $3,000,000; and steel, $2,100,000. In all, Cana supplied some 4 p.c. of Australia's import requirements in 1969.

Canada, on the other hand, imports less than 1 p.c. of its requirements from Austral The more important imports include primary products, mainly processed meats, can and dried fruits, sugar, wine and wool, and products of agriculture and ranching.

Canada's substantial trade surplus with Australia rose moderately from $64,000,0 in 1960 to $72,000,000 in 1969. Canadian technology has been of considerable interest Australians in their drive for industrialization in such fields as communications, nucl power, nickel refining, natural gas pipelines, fisheries and forest fire fighting. Canadi companies engaged largely in mining and manufacturing have invested more than $35 000,000 in Australia.

New Zealand.—The trade between Canada and New Zealand has been mutua advantageous to the two countries. Canadian exports in 1969 amounted to $37,800,0 and imports to $41,200,000. Except for a small trade deficit in 1969, Canada maintai a surplus with New Zealand during the 1960s ranging from $14,000,000 to $27,000,0 The main exports to New Zealand in 1969 were: aluminum, $7,100,000; sulphur, $5,300,0 non-farm machinery, $4,500,000; plastics, $2,500,000; aircraft and parts, $2,000,0 potassium chloride, $1,900,000; copper and alloys, $1,800,000; and asbestos, $1,100,0 The chief imports were: beef, $29,700,000; sausages, $3,300,000; wool and animal ha $3,000,000; and mutton and lamb, $2,100,000.

Future exports to Australia and New Zealand could be affected not only by the dustrialization policies of these countries but also by the possible entry of Britain into t European Economic Community. Such a development could bring about adjustments the Commonwealth preference system, together with a change in the importance of th trade with countries such as Japan and the United States.

Other Oceania.—Canada's exports to British, French and U.S. Oceania, which in 69 were valued at $2,600,000, consisted mostly of wheat flour, barley, canned fish, lumber, wsprint and machinery; imports from these islands were valued at $2,800,000. Total ports to and imports from Fiji were $900,000 and $5,700,000, respectively.

utheast Asia

There is considerable diversity among the countries of Southeast Asia. On a per capita sis, the national product of Singapore is perhaps ten times that of Burma, whereas the NP growth rate, calculated at constant prices, ranges from more than 8 p.c. in Singapore 2 p.c. in Burma. Again, while manufactured goods account for half of Singapore's ports, primary products—including minerals—constitute the major portion of exports ewhere. Improved strains of rice and wheat have produced remarkable results, creating w difficulties for Canada as an exporter of grains.

Canada's trade relations with several southeast Asian countries—Malaysia, Singapore, rma, Cambodia and Indonesia—are governed by the General Agreement on Tariffs d Trade. In addition, Canada grants most-favoured-nation treatment to Laos and et-Nam, and exchanges MFN treatment with the Philippines. Preferential treatment exchanged between Canada and both Singapore and Malaysia but the latter maintains ensing control on many imports. Imports are admitted relatively free into the Philip- nes, Singapore and Thailand. In Indonesia, Laos and Viet-Nam most goods require ences.

The ten independent countries in the southeast Asian region provided a $70,000,000 rket for Canada in 1969. Imports from the region consist mostly of a wide variety of pical raw materials and consumer goods. Aid programs financed by the Canadian ternational Development Agency create many openings for exports, as well as private restment programs by Canadian mining interests in the Philippines and Indonesia.

The Philippines.—Canada's exports to the Philippines, with a total population of 000,000, rose from $18,800,000 in 1966 to $32,500,000 in 1969, making this country one the Philippines' leading trading partners. Among the leading exports from Canada : capital equipment, especially communications equipment; construction, mining and estry machinery; motor vehicles and parts; raw and semi-processed industrial materials h as aluminum, zinc, copper, chemicals and synthetic rubber; insulated wire and cable; wsprint; wood pulp; and brewer's malt. The presence in the Philippines of subsidiaries General Motors, Ford and International Harvester has led to a substantial growth in ports of knocked-down motor vehicles, chassis and parts; the value of automotive ducts imported from Canada rose from only $23,000 in 1960 to $9,100,000 in 1969, presenting some 28 p.c. of all Canadian exports to the Philippines.

The Philippine national economy relies heavily on the exports of raw materials, in- ding coconut products, sugar, lumber, natural fibres and minerals. Canadian imports m the Philippines in 1969 included: desiccated coconut, $1,200,000; pineapple products, 100,000; chrome ores and concentrates, $600,000; and veneer and plywood, $400,000. nada's trade surplus with the Philippines nearly doubled during the 1960s to $28,000,000 1969.

Indonesia.—Canada's trade with Indonesia, which has a population of 110,000,000, till limited. Exports to that country rose from $400,000 in 1966 to only $3,100,000 in 9, the main items being: wheat flour, $1,200,000; newsprint, $400,000; electric lighting equipment, $300,000; industrial machinery, $300,000; and skim milk and milk powder, 0,000. Current imports from Indonesia remained insignificant at only $284,000 in 9 compared with $448,000 in 1968. The major items were: spices, $118,000; tea, ,000; natural rubber, $36,000; and sisal and agave fibres, $28,000.

Malaysia.—Even though a wide range of commodities is subject to import duty and port licences are issued on a quota basis, the outlook in Malaysia is promising. Total nadian exports to Malaysia rose from $5,100,000 in 1960 to $16,000,000 in 1969, when

they included aircraft, asbestos, newsprint, aluminum and wheat. Aircraft and part valued at $7,800,000, were shipped in 1969 under a special assistance program. Canadia imports from Malaysia, valued at $32,800,000 in 1969 ($28,400,000 in 1960), included: ti $13,200,000; natural rubber, $9,300,000; palm oil and coconut oil, $2,300,000 each; lumbe $1,400,000; and raw sugar, $1,000,000. Canada's trade deficit with Malaysia, which wa $16,800,000 in 1969, ranged between $8,000,000 and $31,000,000 in the 1960s.

Singapore.—Although Singapore is a city state of 220 sq. miles and 2,000,000 peopl Canada's exports to that country amounted to $5,000,000 in 1969, mainly in the followin categories: wheat, other foodstuffs, tobacco, asbestos, metals, potassium chloride, sulphu newsprint, non-farm machinery, motor vehicles, and communication and related equipmen Imports from Singapore, valued at nearly $22,000,000 in 1969, included: crude rubbe $13,600,000; canned pineapple, $3,100,000; and apparel and accessories, $2,500,000. Canada' trade deficit with Singapore rose from $8,300,000 in 1967 to $17,000,000 in 1969.

Viet-Nam.—Because of the unsettled political situation in Viet-Nam, trade betwee Canada and that country is of minor importance. Exports to that country in 1969 wer valued at $2,100,000, comprising: newsprint, $515,000; whisky, $439,000; cod, $299,00 asbestos, $255,000; milk powder and skim milk, $205,000; medicinal and pharmaceutic products, $132,000; and sugar, $117,000. Imports were negligible.

Cambodia and Laos.—Canada's trade with Cambodia and Laos has been insignif cant. Exports to that area were valued at $204,000 in 1969 compared with $60,000 in 196 and consisted mainly of: newsprint, $162,000; asbestos, $24,000; and building pape $10,000. Imports were again negligible.

Thailand.—Canada's export trade to Thailand increased from $2,700,000 in 1960 t $8,700,000 in 1969, the latter including foodstuffs, metals, asbestos, newsprint, machiner motor vehicles, electrical equipment, hand tools, and aircraft. Imports changed littl during the 1960s, being only a shade under $1,000,000 in 1969, and including lumber, kapo jute, and sago and cassava starch. Canada's favourable trade balance with Thailan accordingly rose from $1,900,000 in 1960 to $7,700,000 in 1969.

Burma.—Commercial links with Burma have been rather tenuous. Canada exporte $1,500,000 worth of goods to that country in 1969, consisting of: wheat flour, $646,00 pens and mechanical pencils, $383,000; asbestos, $264,000; and hoisting machinery an parts, $25,000. Imports in the same year amounted to only $55,000, accounted for mainl by hardwood veneer. Canada's trade surplus with Burma was $1,400,000 in 1969 agains $664,000 in 1968.

Conclusion

While trade development was oriented toward the Atlantic area during the immediat post-World-War-II period, there has been a recent shift in emphasis to the Pacific where in the past ten years, exports increased by 190 p.c. compared with an increase in tot exports of 175 p.c. An important element in this expansion has been trade with Japa Raw materials—comprising coal, metallic concentrates, forestry products, and other bul commodities—will probably remain most prominent among Canadian exports to Japan, bu opportunities are appearing in relatively new fields, and increases may be expected in pro cessed foods, breeding stock, consumer goods and a variety of manufactures.

Investment will become an increasingly important factor in the growth of Canada' trade with the Pacific Rim countries. Canadian business, including a number of Canada based multi-national corporations, is evincing considerable interest in the opportunities fo investment and the promotion of engineering services in the Pacific, especially in Australi and Southeast Asia. The Government of Canada has initiated a Foreign Investmen Insurance Program for developing countries and is examining possibilities for the extensio of these guarantee arrangements to Pacific countries.

PART II.—FOREIGN TRADE STATISTICS*

Section 1.—Explanatory Notes on Canadian Trade Statistics

Sources.—Canadian foreign trade statistics are compiled from information recorded customs documents received by the Dominion Bureau of Statistics from the various oms ports in Canada, supplemented with energy data obtained through other channels. hould be noted that trade figures reflect the physical movements of goods across Canada's onal and customs boundaries, but do not always represent the financial transactions for nges in ownership of these goods.

Coverage.—Total Canadian exports are the sum of domestic exports and re-exports. nestic exports or exports of Canadian produce include shipments abroad of goods wholly luced in Canada together with exports of previously imported goods which have been nged in form by further processing in Canada. Re-exports or exports of foreign produce ude only goods previously included in import statistics which are exported from Canada he same form as when imported. Minor operations such as cleaning, sorting or re-king are not considered as changing the condition of imported goods. Following the oduction in January 1964 of the "General Trade" system of compilation, re-exports e also included outward movements of goods previously imported but stored in customs houses.

Likewise, imports, as from January 1964, include all goods cleared by customs imme-ely on arrival in Canada together with goods that are entered into customs warehouses. earlier years, imports under the "Special Trade" system of presentation included goods red immediately on arrival plus goods cleared for consumption out of customs ware-es. This meant that those goods, which crossed the national boundary into and out of oms warehouses without crossing the customs boundary, were excluded.

Certain commodities have, since January 1960, been excluded from both export and ort trade statistics but have been published monthly under "Special Transactions—-trade". This category includes commodity movements which either have no inter-onal financial implications or are better considered as non-merchandise transactions e statistics of Canada's balance of international payments. These are: unrefined gold, products where the gold content is 80 p.c. or more of the total value, and gold coin, ot collections; settlers' effects; private donations and gifts; tourist purchases; goods ed back and forth across the national boundary by the diplomatic and military per-el of Canada and of foreign countries posted abroad and in Canada, respectively; orary movements for exhibition or competition, including films for processing; bunker lies and stores sold to foreign vessels or aircraft in Canadian ports or purchased by dian carriers abroad; military grants to NATO member countries; ships of British truction and registry imported for use in Canada, and ships purchased for use as national carriers but not used to carry goods between points in Canada; and generally, emporary exports and imports and goods merely moving in transit through Canadian tory.

The series "New Gold Production Available for Export", which has been published as plement to external trade statistics, is deleted. Being an item of non-merchandise actions in the current account, it is described in Chap. XXIV, Sect. 4, on the Canadian ce of international payments.

Valuation.—The basic source documents require the reporting of exports at transac-values, f.o.b. place of lading (i.e., exclusive of inland freight, insurance, handling and charges). Declarations denominated in foreign currency are converted to Canadian rs for publication. The value of goods imported is usually that as determined for ms duty, and the Canadian Customs Act generally requires the valuation of goods point of shipment in the country of provenance. However, continuing effort is made

*Prepared in the External Trade Division, Dominion Bureau of Statistics.

to prevent the inadvertent filtering through during document processing of c.i.f. valu in particular for free goods or goods subject to specific rates of duty.

Classification.—Beginning with statistics for January 1961, a new export commod classification was used, based on the Standard Commodity Classification developed by t DBS as a tool for integrating statistical series derived from different sources. Where the classification previously used classified commodities primarily according to the mater of which they were chiefly composed, the new classification places commodities in sectio mainly according to stage of processing and purpose, as follows: Live Animals; Food, Fe Beverages and Tobacco; Crude Materials, Inedible; Fabricated Materials, Inedible; E Products, Inedible; and Special Transactions—Trade. For most of the commodities major importance in Canadian exports, the classes of the new commodity classification substantially identical with those of its predecessor.

As from January 1964, a new commodity classification was also introduced for imp statistics, based on concepts similar to those embodied in the export commodity classifi tion, so that there has been a closer correspondence between the two sets of statistics. T import commodity classification is more extensive than the export commodity classificati and in its new form gives a comprehensive coverage of those commodities which constit the bulk of Canada's import trade. The grouping system employed in the new classifi tion also makes easier the identification of other commodities which may merit separ specification; continuing study is being made to keep the classification both meaning and up to date in the dynamic environment in which commodities entering internatio trade are becoming more sophisticated and complex.

Trade is credited to countries on the basis of consignment. For exports from Cana the country of consignment is that country to which goods are, at the time of export, tended to pass without interruption of transit except in the course of transfer from one me of conveyance to another. For imports into Canada, the country of consignment is t country from which the goods came without interruption of transit except in the course transfer from one means of conveyance to another. This is not necessarily the country actual origin, since goods produced in one country may be imported by a firm in anot country and re-sold to Canada; in such cases the second country is the country of consi ment to which the goods are credited. There is one exception to this rule; an attempt made to classify by country of origin goods produced in South America, Central Ameri Bermuda and the Antilles and consigned to Canada from the United States. The eff of this procedure is to reduce slightly the imports credited to the United States and increase those credited to South and Central American countries.

The country sub-totals include trade with Commonwealth and other countries (Republic of Ireland and the Republic of South Africa) entitled to Preferential rates of du Trade with Alaska and Hawaii is included in the United States statistics in all the relev tables of this Chapter, even though these two areas were separately classified prior January 1959 and January 1960, respectively.

Discrepancies in Trade Statistics Between Canada and Other Countries. Canada's statistics of exports are rarely in exact agreement with the import statistics of customers and parallel differences occur with Canadian imports. Major factors contrib ing to these discrepancies include:—

(1) Differences in the system of valuation used by Canada and those of other countries, w respect to the treatment of transportation charges, fair market and transaction values.
(2) Differences in the statistical treatment of special categories of trade, such as military s plies, government-financed gifts of commodities, postal and express shipments, tou purchases, bunkers and warehouse trade.
(3) Differing definitions of territorial areas.
(4) Differing systems of crediting trade by countries, notably the consignment system used Canada and the actual origin or ultimate destination system in use in some other countr
(5) Differences in the time at which trade is recorded in the statistics of partner countr caused by the time required for goods to move from one country to another.

Section 2.—Total Foreign Trade

In considering the figures in Sections 2 to 5, it should be noted that exports and imports gold are excluded from among other commodities in all tables. There are, in the main, ee sets of tariff rates in operation in Canada: British Preferential, Most-Favoured-Nation l General Tariff as described at pp. 1109-1110. Generally, the Canadian tariff imposes ies on a greater proportion of manufactured goods than of raw or semi-processed prod- s.

1.—Value of Total Foreign Trade of Canada, 1955-69

NOTE.—An adjustment has been made for "Special Transactions—Non-trade" to present figures on "general e system" throughout.

Year	Exports			Imports			Balance of Trade: Excess of Exports (+) Imports (−)
	Domestic	Re-exports	Total	Dutiable	Free	Total	
	$'000	$'000	$'000	$'000	$'000	$'000	$'000
.....	4,258,328	69,448	4,327,776	2,638,037	1,929,718	4,567,754	− 239,978
.....	4,760,442	73,335	4,833,777	3,292,516	2,254,435	5,546,951	− 713,175
.....	4,788,880	95,261	4,884,141	3,223,197	2,250,149	5,473,346	− 589,205
.....	4,791,436	102,907	4,894,343	2,952,707	2,097,785	5,050,492	− 156,150
.....	5,021,672	118,628	5,140,300	3,143,065	2,365,856	5,508,921	− 368,621
.....	5,255,575	131,217	5,386,792	3,048,583	2,434,112	5,482,695	− 95,903
.....	5,754,986	140,229	5,895,215	3,115,408	2,653,170	5,768,578	+ 126,637
.....	6,178,523	169,190	6,347,713	3,480,282	2,777,494	6,257,776	+ 89,937
.....	6,798,529	181,613	6,980,142	3,542,585	3,015,623	6,558,209	+ 421,933
.....	8,094,219	209,186	8,303,405	4,034,903	3,452,804	7,487,707	+ 815,698
.....	8,525,078	241,599	8,766,677	4,366,849	4,266,300	8,633,148	+ 133,529
.....	10,070,627	254,693	10,325,320	4,831,709	5,034,730	9,866,439	+ 458,881
r.....	11,120,674	299,284	11,419,957	5,096,920	5,978,279	11,075,199	+ 344,759
.....	13,250,960	354,078	13,605,038	5,029,260	7,328,722	12,357,982	+ 1,247,056
.....	14,441,513	427,647	14,869,161	5,905,376	8,296,256	14,201,632	+ 667,529

Section 3.—Trade by Geographic Area

The tables in this Section provide information about Canada's exports and imports by graphic region and by country.

2.—Trade of Canada with Commonwealth and Preferential Countries, and Other Countries, 1950-69

Item and Year	United Kingdom		Other Commonwealth and Preferential Countries		United States		Other Countries	
	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total
Domestic Exports	$'000		$'000		$'000		$'000	
.....	467,896	15.1	197,654	6.4	2,020,703	65.1	417,763	13.4
.....	630,124	16.2	260,889	6.7	2,296,235	58.9	709,834	18.2
.....	744,461	17.4	283,809	6.6	2,302,673	53.8	951,418	22.2
.....	662,785	16.2	244,745	6.0	2,413,318	58.9	776,263	18.9
.....	651,033	16.9	202,561	5.2	2,308,670	59.8	697,953	18.1
.....	767,642	18.0	248,624	5.9	2,547,636	59.8	694,426	16.3
.....	811,113	17.0	252,117	5.3	2,803,085	58.9	894,127	18.8
.....	720,898	15.1	240,016	5.0	2,846,646	59.4	981,320	20.5
.....	771,576	16.1	290,125	6.1	2,808,067	58.6	921,667	19.2
.....	785,302	15.7	281,462	5.6	3,083,151	61.4	871,257	17.3
.....	915,290	17.4	333,815	6.4	2,932,171	55.8	1,074,300	20.4
.....	909,344	15.8	328,854	5.7	3,107,176	54.0	1,409,612	24.5
.....	909,041	14.7	331,004	5.4	3,608,439	58.4	1,330,040	21.5
.....	1,006,838	14.8	391,526	5.8	3,766,380	55.4	1,633,785	24.0
.....	1,199,779	14.8	493,871	6.1	4,271,059	52.8	2,129,510	26.3
.....	1,174,309	13.8	502,330	5.9	4,840,456	56.8	2,007,984	23.6
.....	1,122,574	11.1	547,420	5.4	6,027,722	59.9	2,372,911	23.6
.....	1,169,053	10.5	638,201	5.8	7,088,490	63.7	2,224,930	20.0
.....	1,209,567	9.1	593,093	4.5	8,922,526	67.3	2,525,774	19.1
.....	1,096,480	7.6	588,858	4.1	10,215,400	70.7	2,540,775	17.6

2.—Trade of Canada with Commonwealth and Preferential Countries, and Other Countries, 1950-69—concluded

Item and Year	United Kingdom		Other Commonwealth and Preferential Countries		United States		Other Countries	
	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Tot
Imports	$'000		$'000		$'000		$'000	
1950	400,811	12.8	241,124	7.7	2,089,531	66.9	393,765	12
1951	415,194	10.4	306,287	7.6	2,752,087	68.7	531,371	13
1952	351,541	9.0	184,345	4.7	2,887,628	73.7	492,904	12
1953	445,441	10.5	170,224	4.0	3,115,301	73.3	516,842	12
1954	382,229	9.6	181,884	4.6	2,871,279	72.4	532,010	13
1955	393,117	8.6	209,265	4.6	3,331,143	72.9	634,229	13
1956	476,371	8.6	220,808	4.0	4,031,394	72.7	818,378	14
1957	507,319	9.3	239,054	4.4	3,887,391	71.0	839,582	15
1958	518,505	10.3	210,016	4.2	3,460,147	68.5	861,824	17
1959	588,573	10.7	241,241	4.4	3,709,065	67.3	970,042	17
1960	588,932	10.8	281,167	5.1	3,686,625	67.2	925,971	16
1961	618,221	10.7	292,155	5.1	3,863,968	67.0	994,233	17
1962	563,062	9.0	318,501	5.1	4,299,539	68.7	1,076,673	17
1963	526,800	8.0	400,820	6.1	4,444,556	67.8	1,186,033	18
1964	573,995	7.7	405,850	5.4	5,164,285	69.0	1,343,577	17
1965	619,058	7.2	372,780	4.3	6,044,831	70.0	1,596,480	18
1966	644,741	6.5	416,293	4.2	7,135,611	72.3	1,669,794	16
1967	673,050	6.1	435,291	3.9	8,016,341	72.4	1,950,517	17
1968	696,085	5.6	452,998	3.7	9,048,372	73.2	2,160,528	17
1969	790,973	5.6	571,916	4.0	10,312,638	72.6	2,526,105	17

3.—Trade of Canada by Leading Countries, 1969 with Comparable Figures for 1967 and 1968

Rank in—			Item and Country	1967	1968	1969
1967	1968	1969				
			Domestic Exports	$'000	$'000	$'000
1	1	1	United States	7,088,490	8,922,526	10,215,
2	2	2	United Kingdom	1,169,053	1,209,567	1,096,
3	3	3	Japan	572,156	606,787	624,7
4	4	4	Germany, Federal Republic	177,955	228,733	277,3
5	6	5	Netherlands	176,431	178,850	184,9
6	5	6	Australia	156,249	185,717	163,2
7	8	7	Italy	141,439	131,210	133,6
14	14	8	France	80,608	81,516	124,7
11	7	9	People's Republic of China	91,306	163,243	122,4
10	9	10	Belgium and Luxembourg	100,800	126,648	116,2
12	10	11	Norway	87,424	116,559	103,6
8	11	12	India	140,592	111,255	95,5
13	12	13	Venezuela	82,049	102,671	92,9
15	15	14	Republic of South Africa	77,690	68,341	78,5
16	16	15	Mexico	49,202	54,589	72,8
21	18	16	Argentina	33,380	48,017	62,3
19	20	17	Spain	39,623	41,114	55,9
25	17	18	Brazil	27,540	48,200	50,2
24	25	19	Sweden	27,808	31,744	41,2
17	19	20	Cuba	42,390	44,988	40,7
20	23	21	Jamaica	39,080	34,378	40,4
18	24	22	New Zealand	40,742	31,842	36,9
26	21	23	Puerto Rico	26,772	37,811	36,9
29	26	24	Switzerland	23,833	31,197	34,2
28	22	25	Philippines	25,458	34,546	32,3
23	28	26	Peru	32,344	22,231	26,2
32	29	27	Chile	17,747	20,735	22,8
22	27	28	Pakistan	33,181	29,689	22,1
30	34	29	Trinidad and Tobago	20,115	16,228	19,4
52	36	30	Turkey	5,014	13,242	18,9
			Totals, 30 Leading Countries	**10,626,471**	**12,774,174**	**14,043,8**
			Grand Totals, Exports	**11,120,674**	**13,250,960**	**14,441,5**

3.—Trade of Canada by Leading Countries, 1969 with Comparable Figures for 1967 and 1968—concluded

Rank in—			Item and Country	1967	1968	1969
1967	1968	1969				
			Imports	$'000	$'000	$'000
1	1	1	United States	8,016,341	9,048,372	10,312,638
2	2	2	United Kingdom	673,050	696,085	790,973
3	3	3	Japan	304,768	360,180	495,704
5	5	4	Germany, Federal Republic	256,879	298,869	354,714
4	4	5	Venezuela	276,327	357,862	345,596
6	6	6	France	130,080	121,647	153,712
7	7	7	Italy	110,269	114,492	141,117
12	9	8	Australia	64,471	75,990	96,285
8	8	9	Sweden	76,242	78,091	84,506
9	11	10	Switzerland	66,022	64,326	83,926
10	10	11	Netherlands	64,783	69,052	78,678
14	12	12	Hong Kong	51,040	58,354	72,942
24	14	13	Mexico	29,535	52,167	64,067
11	13	14	Belgium	64,620	57,520	60,936
13	15	15	Netherlands Antilles	60,293	49,658	50,395
20	22	16	Jamaica	31,860	33,935	45,978
16	16	17	Republic of South Africa	37,060	39,315	45,944
18	17	18	Norway	33,761	39,204	44,895
28	21	19	Taiwan	23,569	34,379	42,456
21	18	20	Brazil	31,436	38,725	42,128
34	33	21	New Zealand	15,270	18,645	41,182
15	19	22	India	42,774	38,304	40,905
31	25	23	Austria	19,715	28,563	38,878
30	28	24	Malaysia	22,298	25,986	32,824
26	27	25	Denmark	27,055	26,393	32,392
23	24	26	Guyana	29,581	29,408	31,050
19	23	27	Iran	33,229	33,569	30,176
28	26	28	Czechoslovakia	28,529	27,367	30,046
33	29	29	Spain	17,093	25,626	28,714
27	30	30	People's Republic of China	25,074	23,439	27,421
			Totals, 30 Leading Countries	**10,663,024**	**11,965,523**	**13,741,178**
			Grand Totals, Imports	**11,075,199**	**12,357,982**	**14,201,632**

4.—Value of Domestic Exports, by Geographic Region and Country, 1962-69

Region and Country	1962	1963	1964	1965	1966	1967	1968	1969
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Western Europe—								
United Kingdom	909,041	1,006,838	1,199,779	1,174,309	1,122,574	1,169,053	1,209,567	1,096,480
Gibraltar	149	185	110	60	113	41	39	26
Ireland	10,329	10,461	15,072	16,664	14,948	15,645	11,124	13,949
Malta and Gozo	2,217	2,313	2,721	1,964	1,643	1,351	814	1,951
Austria	7,316	6,826	7,475	9,857	11,600	7,810	6,008	9,067
Belgium and Luxembourg	68,169	76,493	100,535	128,011	117,505	100,800	126,648	116,232
Denmark	6,087	6,811	7,484	9,176	10,802	15,730	15,579	15,010
Finland	5,240	7,277	4,458	4,792	7,078	4,661	7,058	7,177
France	57,561	63,428	79,433	87,273	84,541	80,608	81,516	124,708
Germany, Federal Republic	177,688	170,969	211,360	189,493	176,800	177,955	228,733	277,382
Greece	9,235	7,429	8,013	8,231	9,647	8,629	8,904	10,265
Iceland	287	347	10,459	10,228	6,492	738	298	385
Italy	74,521	76,761	62,236	93,223	114,787	141,439	131,210	133,671
Netherlands	76,940	87,009	101,582	127,766	143,113	176,431	178,850	184,966
Norway	69,054	73,398	67,582	82,456	107,014	87,424	116,559	103,645
Portugal	2,563	5,859	6,264	5,260	5,228	7,138	6,310	7,039
Spain	15,416	20,500	21,235	33,825	36,900	39,623	41,114	55,908
Sweden	18,230	20,926	29,922	28,980	36,574	27,808	31,744	41,278
Switzerland	23,891	27,247	28,502	27,095	31,010	23,833	31,197	34,239
Totals, Commonwealth and Preferential Countries	921,736	1,019,797	1,217,683	1,192,996	1,139,278	1,186,089	1,221,544	1,112,406
Totals, Other Countries	612,198	651,279	746,540	845,666	899,092	900,628	1,011,727	1,120,973
Totals, Western Europe	**1,533,934**	**1,671,076**	**1,964,223**	**2,038,663**	**2,038,369**	**2,086,718**	**2,233,271**	**2,233,379**

4.—Value of Domestic Exports, by Geographic Region and Country, 1962-69—continued

Region and Country	1962	1963	1964	1965	1966	1967	1968	1969
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Eastern Europe—								
Albania	3,053	2	10,873	9,471	7,562	5,705	2,793	3,65
Bulgaria	388	28	19,239	7,364	7,812	37	79	10
Czechoslovakia	3,522	13,289	54,230	34,762	5,080	10,970	12,394	3,77
Germany, East	148	1,262	11,739	15,216	12,311	5,516	1,206	1,84
Hungary	350	374	1,910	8,352	3,293	3,500	12,333	2,88
Poland	37,391	27,200	62,653	31,565	37,404	25,790	18,240	6,55
Romania	514	1,275	540	641	685	345	1,212	1,22
Union of Soviet Socialist Republics	3,297	150,123	315,943	197,362	320,605	128,663	88,569	9,07
Yugoslavia	999	17,519	5,443	8,561	3,664	3,484	6,551	8,02
Totals, Eastern Europe	**49,662**	**211,071**	**482,568**	**313,294**	**398,415**	**184,011**	**143,378**	**37,12**
Middle East—								
People's Republic of Southern Yemen	[1]	[1]	[1]	193	218	404	66	1
Bahrain	210	162	151	160	331	82	221	8
Cyprus	298	513	193	261	328	307	443	49
Qatar	213	246	279	548	409	201	132	15
Trucial States	[1]	[1]	[1]	66	152	162	445	4,16
British Middle East, *n.e.s.*	159	127	138	[2]	[2]	[2]	[2]	[2]
Ethiopia	105	139	236	581	842	498	294	25
Iran	5,293	3,568	3,372	3,282	3,795	3,055	6,567	5,22
Iraq	1,343	3,376	957	734	887	625	882	2,79
Israel	6,232	8,163	9,109	6,261	10,703	6,565	9,827	16,97
Jordan	145	244	245	306	429	411	300	64
Kuwait	1,040[3]	2,748	934	3,582	3,994	2,890	2,527	1,70
Lebanon	2,244	2,365	2,516	2,419	3,134	2,497	3,383	3,52
Libya	376	690	907	660	695	1,131	826	2,36
Saudi Arabia	3,257	3,548	3,133	5,343	5,034	3,635	4,057	3,61
Somalia	3	22	[1]	26	8	3	19	3
Sudan	180	173	113	120	363	898	2,052	49
Syria	561	713	387	665	555	511	4,679	91
Turkey	978	2,378	1,581	3,468	4,781	5,014	13,242	18,91
United Arab Republic—Egypt	2,230	2,536	3,978	4,772	5,330	931	3,242	2,94
Totals, Commonwealth and Preferential Countries	1,920[4]	1,048	760	1,227	1,438	1,156	1,306	4,91
Totals, Other Countries	22,945	30,662	27,468	32,218	40,551	28,665	51,897	60,40
Totals, Middle East	**24,866**	**31,710**	**28,229**	**33,446**	**41,989**	**29,821**	**53,203**	**65,32**
Other Africa—								
Gambia	[5]	212	71	162	163	171	165	14
Ghana	8,400	5,451	7,333	5,723	3,994	4,384	5,075	5,10
Kenya	680	1,003	911	4,605	1,653	2,114	1,884	2,37
Malawi	[6]	[6]	[6]	90	143	317	218	29
Mauritius and Dependencies	94	218	94	236	135	200	354	19
Nigeria	6,997	3,234	6,292	6,934	10,108	3,700	3,809	4,16
Northern Rhodesia	[7]	826	1,031	[8]	[8]	[8]	[8]	[8]
Nyasaland	[7]	99	156	[9]	[9]	[9]	[9]	[9]
Republic of South Africa	37,525	60,299	69,166	76,226	74,393	77,690	68,341	78,50
Rhodesia	[10]	[10]	[10]	3,841	603	95	24	2
Rhodesia and Nyasaland	3,367	[11]	[11]	[12]	[12]	[12]	[12]	[12]
Sierra Leone	1,200	1,298	1,329	1,134	1,743	724	164	53
Southern Rhodesia	[7]	3,637	3,150	[13]	[13]	[13]	[13]	[13]
Tanganyika	228	377	192	[14]	[14]	[14]	[14]	[14]
Tanzania	[15]	[15]	[15]	316	2,039	3,229	1,163	63
Uganda	137	148	259	1,167	521	364	1,299	83
Zambia	[16]	[16]	[16]	4,279	1,384	4,082	1,939	1,50
Commonwealth Africa, *n.e.s.*	161	52	31	35	13	14	10	12
Algeria	2,202	3,970	1,212	228	965	2,674	7,309	2,94
Angola	44	104	75	228	315	222	377	38
Cameroun Republic	92	24	39	157	199	249	385	85
Congo (Kinshasa)	889	921	1,127	872	956	586	1,637	1,39

[1] Included with British Middle East, *n.e.s.* [2] See People's Republic of Southern Yemen and Trucial States. [3] Included with "Totals, Commonwealth and Preferential Countries". [4] Includes Kuwait. [5] Included with Commonwealth Africa, *n.e.s.* [6] Formerly Nyasaland. [7] Included with Rhodesia and Nyasaland. [8] See Zambia. [9] See Malawi. [10] Formerly Southern Rhodesia. [11] See Northern Rhodesia, Southern Rhodesia and Nyasaland. [12] See Zambia, Rhodesia and Malawi. [13] See Rhodesia. [14] See Tanzania. [15] Formerly Tanganyika. [16] Formerly Northern Rhodesia.

4.—Value of Domestic Exports, by Geographic Region and Country, 1962-69—continued

Region and Country	1962	1963	1964	1965	1966	1967	1968	1969
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
ther Africa—concluded								
Dahomey	[1]	[1]	[1]	[1]	[1]	120	107	826
French Equatorial Africa	5	[1]	[1]	[1]	[1]	[1]	[1]	[1]
French West Africa	775	[1]	[1]	[1]	[1]	[1]	[1]	[1]
French Africa, *n.e.s.*	9	92	214	226	461	291	548	2,216
Gabon Republic	61	15	146	31	294	560	813	1,000
Guinea, Republic of	131	[2]	4	81	728	42	284	242
Ivory Coast	10	18	66	49	88	246	657	651
Liberia	816	1,100	5,518	1,908	1,344	1,349	1,056	1,340
Malagasy Republic	[1]	[1]	[1]	108	45	32	145	22
Mauritania	[3]	258	169	657	123	114	300	606
Morocco	459	963	667	391	297	3,725	4,627	1,463
Mozambique	2,504	2,646	1,806	3,282	1,280	1,871	2,931	3,006
Portuguese Africa, *n.e.s.*	197	283	164	367	171	109	178	269
Senegal	[1]	[1]	[1]	[1]	[1]	1,314	153	771
Spanish Africa	118	27	229	112	85	135	96	209
Togo	105	350	443	317	585	354	436	453
Tunisia	30	1,970	327	86	196	93	1,561	2,584
Totals, Commonwealth and Preferential Countries	58,790	76,853	90,012	104,748	96,894	97,084	84,446	94,428
Totals, Other Countries	8,449	12,738	12,207	9,101	8,131	14,085	23,598	21,239
Totals, Other Africa	**67,239**	**89,591**	**102,219**	**113,849**	**105,024**	**111,169**	**108,044**	**115,666**
her Asia—								
Ceylon	2,007	2,636	4,724	2,199	5,250	9,027	5,626	3,153
Hong Kong	14,283	17,490	22,278	16,734	15,385	17,349	16,587	17,678
India	29,633	53,900	64,042	58,453	107,662	140,592	111,255	95,552
Malaysia	5,453	6,999	8,370	9,253	15,376	13,445	10,726	15,524
Pakistan	10,755	19,152	20,031	21,643	25,671	33,181	29,689	22,142
Singapore	[4]	[4]	[4]	[4]	[4]	2,868	3,159	4,822
British East Indies, *n.e.s.*	435	[4]	[4]	[4]	[4]	[4]	[4]	[4]
Afghanistan	25	18	23	23	18	799	465	91
Burma	1,303	703	736	671	1,195	262	740	1,469
Cambodia and Laos	2	17	9	128	98	63	76	204
People's Republic of China	147,438	104,738	136,263	105,131	184,879	91,306	163,243	122,418
Indonesia	2,027	1,449	703	1,636	347	2,771	2,408	2,948
Japan	214,535	296,010	330,234	316,187	393,892	572,156	606,787	624,795
Korea	1,492	3,815	1,096	823	[5]	[5]	[5]	[5]
Korea, North	[6]	[6]	[6]	[6]	12,802	[2]	—	253
Korea, South	[7]	[7]	[7]	[7]	2,849	7,671	13,203	15,331
Philippines	18,545	21,284	27,809	26,354	18,683	25,458	34,546	32,328
Portuguese Asia	22	38	41	48	60	48	52	28
Portuguese India	[8]	[8]	[8]	[8]	[8]	[8]	[8]	[8]
Taiwan	4,387	3,759	6,178	6,577	8,410	12,267	16,893	12,631
Thailand	3,472	2,823	3,803	5,621	6,742	6,947	7,162	8,539
Viet-Nam	298	250	726	804	2,589	1,939	2,168	2,135
Totals, Commonwealth and Preferential Countries	62,566	100,176	119,445	108,282	169,344	216,461	177,043	158,872
Totals, Other Countries	393,546	434,903	507,623	464,002	632,565	721,687	847,744	823,172
Totals, Other Asia	**456,112**	**535,079**	**627,068**	**572,284**	**801,909**	**938,148**	**1,024,786**	**982,043**
eania—								
Australia	104,965	100,773	145,812	140,372	117,359	156,249	185,717	163,258
Fiji	705	759	891	1,115	829	875	910	873
New Zealand	26,784	30,549	33,714	36,845	41,750	40,742	31,842	36,976
British Oceania, *n.e.s.*	296	249	386	317	304	205	235	72
French Oceania	366	299	436	508	614	1,149	1,693	715
United States Oceania	3,084	3,693	1,261	828	740	764	948	1,734
Totals, Commonwealth and Preferential Countries	132,750	132,330	180,804	178,650	160,241	198,071	218,704	201,180
Totals, Other Countries	3,451	3,992	1,697	1,336	1,354	1,914	2,641	2,449
Totals, Oceania	**136,201**	**136,322**	**182,501**	**179,986**	**161,595**	**199,985**	**221,345**	**203,629**

[1] Included with French Africa, *n.e.s.* [2] Less than $500. [3] Included with French West Africa. cluded with Malaysia. [5] Trade with Korea included in Korea, North and Korea, South. [6] Trade h Korea, North included with Korea. [7] Trade with Korea, South included with Korea. [8] Included h India.

4.—Value of Domestic Exports, by Geographic Region and Country, 1962-69—concluded

Region and Country	1962	1963	1964	1965	1966	1967	1968	1969
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
South America—								
Falkland Islands	13	6	1	4	9	133	1	
Guyana	5,102	5,061	7,116	7,750	9,878	12,132	9,291	8,3
Argentina	22,546	36,992	26,889	32,720	39,529	33,380	48,017	62,3
Bolivia	363	628	985	1,687	2,126	2,233	3,478	2,0
Brazil	28,481	29,432	22,985	17,509	21,157	27,540	48,200	50,2
Chile	13,278	12,329	12,659	10,514	12,316	17,747	20,735	22,8
Colombia	19,887	23,348	21,252	17,362	25,397	18,199	18,376	18,7
Ecuador	3,777	3,913	5,719	4,672	3,028	3,093	3,481	2,5
French Guiana	5	2	4	54	18	38	15	
Paraguay	41	211	485	177	129	114	717	3
Peru	8,140	11,641	10,749	21,864	36,355	32,344	22,231	26,2
Surinam	866	1,031	1,610	1,283	1,834	1,238	2,037	1,3
Uruguay	3,151	2,994	5,679	3,283	4,779	2,952	2,377	3,3
Venezuela	42,328	46,328	64,075	73,045	75,958	82,049	102,671	92,9
Totals, Commonwealth and Preferential Countries	5,115	5,067	7,117	7,754	9,887	12,265	9,292	8,4
Totals, Other Countries	142,863	168,848	173,090	184,168	222,626	220,927	272,336	283,0
Totals, South America	**147,978**	**173,915**	**180,207**	**191,922**	**232,512**	**233,192**	**281,628**	**291,4**
Central America and Antilles—								
Bahamas	5,010	6,133	8,876	9,257	10,847	10,245	12,772	15,2
Barbados	4,481	5,469	6,922	6,826	8,112	8,417	10,056	8,7
Bermuda	4,492	5,713	6,339	5,984	7,442	7,372	7,134	9,0
British Honduras	835	698	973	1,065	921	1,179	1,343	1,7
Jamaica	21,891	22,271	28,942	30,280	33,500	39,080	34,378	40,4
Leeward and Windward Islands	5,642	6,596	7,986	8,037	8,753	9,719	8,414	10,3
Trinidad and Tobago	14,817	16,213	17,791	21,532	23,337	20,115	16,228	19,4
Costa Rica	3,473	3,651	3,841	5,397	5,130	4,173	2,814	3,1
Cuba	10,878	16,433	60,930	52,594	61,436	42,390	44,988	40,7
Dominican Republic	8,488	9,085	9,070	6,152	6,824	4,710	5,637	6,1
El Salvador	3,354	3,134	4,416	4,051	3,294	4,470	3,171	4,9
French West Indies	53	66	135	144	157	225	460	6
Guatemala	2,705	3,107	3,433	4,001	3,254	2,921	2,487	3,8
Haiti, Republic of	1,277	1,525	1,485	1,302	1,228	1,124	2,063	3,6
Honduras, Republic of	899	1,100	1,260	1,005	1,445	1,086	1,359	1,0
Mexico	41,267	55,572	65,151	51,006	52,145	49,202	54,589	72,8
Netherlands Antilles	1,793	2,406	2,355	3,004	3,008	3,683	3,079	3,1
Nicaragua	2,135	2,693	2,209	2,805	3,070	2,820	2,179	2,4
Panama	5,645	4,417	4,602	4,622	5,444	4,659	5,521	6,4
Puerto Rico	12,711	14,619	15,408	17,693	19,560	26,772	37,811	36,9
United States Virgin Islands	283	284	1,317	1,571	950	836	1,343	1,0
Totals, Commonwealth and Preferential Countries	57,167	63,093	77,829	82,981	92,913	96,127	90,325	105,1
Totals, Other Countries	94,961	118,092	175,612	155,348	166,944	149,071	167,501	187,2
Totals, Central America and Antilles	**152,129**	**181,185**	**253,441**	**238,329**	**259,856**	**245,198**	**257,826**	**292,3**
North America—								
Greenland	167	287	272	137	156	480	363	
St. Pierre and Miquelon	1,799	1,913	2,431	2,713	3,079	3,461	4,590	4,9
United States	3,608,439	3,766,380	4,271,059	4,840,456	6,027,722	7,088,490	8,922,526	10,215,4
Totals, North America	**3,610,404**	**3,768,580**	**4,273,762**	**4,843,307**	**6,030,957**	**7,092,431**	**8,927,479**	**10,220,4**
Grand Totals, Commonwealth and Preferential Countries	**1,240,045**	**1,398,364**	**1,693,650**	**1,676,638**	**1,669,994**	**1,807,254**	**1,802,660**	**1,685,3**
Grand Totals, Other Countries	**4,938,479**	**5,400,165**	**6,400,569**	**6,848,440**	**8,400,633**	**9,313,420**	**11,448,300**	**12,756,1**
Grand Totals, All Countries	**6,178,523**	**6,798,529**	**8,094,219**	**8,525,078**	**10,070,627**	**11,120,674**	**13,250,960**	**14,441,5**

5.—Value of Imports, by Geographic Region and Country, 1962-69

Region and Country	1962	1963	1964	1965	1966	1967	1968	1969
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
tern Europe—								
nited Kingdom	563,062	526,800	573,995	619,058	644,741	673,050	696,085	790,973
ibraltar	—	—	13	2	1	[1]	[1]	[1]
eland	4,826	5,320	5,624	6,861	6,512	8,986	9,675	11,102
alta and Gozo	36	232	113	387	394	617	594	1,458
ustria	7,971	9,026	9,595	12,281	15,192	19,715	28,563	38,878
elgium and Luxembourg	48,672	47,342	59,198	72,027	61,555	64,620	57,520	60,936
enmark	13,278	13,209	15,749	20,071	24,181	27,055	26,393	32,392
nland	1,939	2,520	3,177	2,762	3,533	3,296	4,234	12,610
rance	56,160	58,170	68,687	96,103	106,651	130,080	121,647	153,712
ermany, Federal Republic	141,198	144,023	170,392	209,517	235,207	256,879	298,869	354,714
reece	1,094	1,631	1,550	1,838	1,831	3,521	3,259	4,335
eland	1,183	696	2	659	509	452	13	34
aly	51,859	55,303	67,462	80,279	86,718	110,269	114,492	141,117
etherlands	37,049	36,736	39,933	56,274	60,489	64,783	69,052	78,678
orway	16,109	23,492	27,335	33,641	33,774	33,761	39,204	44,895
ortugal	5,998	7,713	9,414	11,053	13,288	14,437	12,321	13,648
ain	8,463	8,496	11,704	13,280	12,505	17,093	25,626	28,714
weden	25,873	33,410	38,794	55,568	72,541	76,242	78,091	84,506
witzerland	28,040	32,469	36,932	43,986	50,279	66,022	64,326	83,926
Totals, Commonwealth and Preferential Countries	567,924	532,352	579,746	626,307	651,648	682,653	706,354	803,533
Totals, Other Countries	444,887	474,236	559,924	709,338	778,252	888,223	943,612	1,133,093
Totals, Western Europe	**1,012,811**	**1,006,588**	**1,139,670**	**1,335,646**	**1,429,900**	**1,570,877**	**1,649,966**	**1,936,626**
tern Europe—								
bania	—	—	—	1	—	4	—	[1]
lgaria	34	74	114	526	768	1,308	1,602	1,316
echoslovakia	9,033	9,204	12,847	15,965	21,709	28,529	27,367	30,046
rmany, East	881	1,207	1,473	1,584	2,163	3,291	2,927	3,481
ngary	417	557	761	1,608	3,309	6,542	7,942	9,184
land	4,792	6,788	9,280	11,815	13,757	14,982	13,351	12,408
mania	61	124	82	238	569	1,003	1,884	7,142
ion of Soviet Socialist Republics	1,777	2,313	2,808	9,885	11,654	23,015	21,659	12,302
goslavia	1,801	1,843	2,601	2,967	2,638	3,754	4,725	5,632
Totals, Eastern Europe	**18,795**	**22,109**	**29,966**	**44,588**	**56,566**	**82,426**	**81,457**	**81,510**
lle East—								
ople's Republic of Southern Yemen	[2]	[2]	[2]	353	80	15	18	404
hrain	—	1	—	—	—	—	5	—
prus	151	88	48	291	108	306	345	298
tar	6,273	8,678	2,285	2,732	—	27	—	—
ucial States	[2]	[2]	[2]	1,741	2,984	1	4,626	14,922
itish Middle East, *n.e.s.*	68	56	3,183	[3]	[3]	[3]	[3]	[3]
hiopia	5	21	141	66	63	90	85	43
n	31,736	42,799	31,085	31,765	35,469	33,229	33,569	30,176
q	704	1,269	2,379	5,284	12,529	9,413	554	8,838
ael	5,646	6,043	6,270	6,656	6,758	9,210	12,889	15,067
dan	1	3	10	9	7	20	4	[1]
wait	10,034[4]	5,169	11,219	11,505	6,157	2,287	3,864	6,072
banon	58	65	81	50	1,040	104	409	854
ya	10	[1]	—	1	10,963	11,263	[1]	8,873
udi Arabia	40,551	50,290	18,553	42,114	32,553	30,967	36,187	26,751
malia	—	1	1	—	24	—	—	—
dan	105	148	113	138	93	123	192	304
ria	455	362	492	515	380	61	42	5
rkey	1,472	1,294	1,207	1,055	979	1,480	1,697	3,646
ited Arab Republic—Egypt	301	224	125	221	661	258	380	1,144
Totals, Commonwealth and Preferential Countries	16,525[5]	8,823	5,516	5,118	3,171	348	4,995	15,624
Totals, Other Countries	81,044	107,688	71,675	99,379	107,676	98,506	89,872	101,774
Totals, Middle East	**97,569**	**116,511**	**77,191**	**104,496**	**110,848**	**98,854**	**94,868**	**117,398**

— Less than $500.
[1] Included with British Middle East, *n.e.s.*
[2] See People's Republic of Southern Yemen and Trucial States.
[3] Included with "Totals, Commonwealth and Preferential Countries".
[4] Kuwait.
[5] In-

5.—Value of Imports, by Geographic Region and Country, 1962-69—continued

Region and Country	1962	1963	1964	1965	1966	1967	1968	1969
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Other Africa—								
Ghana	7,036	6,533	7,961	10,158	10,824	7,950	11,073	7,5
Kenya	3,157	5,323	7,397	6,862	7,206	7,409	4,352	5,6
Malawi	[1]	[1]	[1]	391	583	647	1,033	5
Mauritius and Dependencies	5,215	8,606	13,394	6,456	5,131	2,919	7,974	14,1
Nigeria	5,726	7,924	11,264	11,252	39,490	36,560	16,966	22,2
Northern Rhodesia	[2]	1,306	37	[3]	[3]	[3]	[3]	[3]
Nyasaland	[2]	408	297	[4]	[4]	[4]	[4]	[4]
Republic of South Africa	16,952	31,548	28,777	27,113	27,641	37,060	39,315	45,9
Rhodesia	[5]	[5]	[5]	3,408	1,175	4	2	
Rhodesia and Nyasaland	3,272	[6]	[6]	[7]	[7]	[7]	[7]	[7]
Sierra Leone	22	5	3	311	66	3	—	1
Southern Rhodesia	[2]	6,320	4,279	[8]	[8]	[8]	[8]	[8]
Tanganyika	2,173	7,315	9,061	[9]	[9]	[9]	[9]	[9]
Tanzania	[10]	[10]	[10]	6,907	7,065	6,469	4,535	3,8
Uganda	2,213	3,144	4,582	6,800	5,862	9,719	9,930	6,6
Zambia	[11]	[11]	[11]	2	8	21	3	
Commonwealth Africa, *n.e.s.*	7	4	3	4	8	3	11	2,8
Algeria	509	458	61	98	47	245	139	
Angola	122	728	1,297	1,415	3,095	5,924	7,743	6,1
Cameroun Republic	15	147	43	121	57	106	107	[13]
Congo (Kinshasa)	1,320	1,921	1,911	1,661	1,081	1,374	946	1,3
Dahomey	[12]	[12]	[12]	[12]	[12]	5	28	[13]
French Equatorial Africa	8	[12]	[12]	[12]	[12]	[12]	[12]	[12]
French West Africa	[13]	[12]	[12]	[12]	[12]	[12]	[12]	[12]
French Africa, *n.e.s.*	17	310	1,263	68	542	31	659	
Gabon Republic	1,123	859	687	274	1,064	317	56	
Guinea, Republic of	896	2,501	1,707	1,066	2,088	2,265	1,076	1
Ivory Coast	244	227	623	247	814	700	481	4,7
Liberia	40	106	327	208	63	365	627	9
Malagasy Republic	[12]	[12]	[12]	668	538	250	51	1
Mauritania	[14]	[12]	—	—	—	12	—	2
Morocco	487	540	1,162	278	1,406	2,465	969	4
Mozambique	139	395	431	633	515	735	681	9
Portuguese Africa, *n.e.s.*	[13]	—	—	—	—	[13]	1	[13]
Senegal	[12]	[12]	[12]	[12]	[12]	13	14	
Spanish Africa	23	39	22	6	2	4	1	
Togo	—	—	—	6	—	1	—	
Tunisia	17	2	19	19	12	512	185	
Totals, Commonwealth and Preferential Countries	45,772	78,433	87,055	79,664	105,060	108,764	95,189	109,5
Totals, Other Countries	4,962	8,234	9,553	6,767	11,323	15,325	13,765	15,2
Totals, Other Africa	**50,734**	**86,667**	**96,608**	**86,431**	**116,383**	**124,089**	**108,955**	**124,8**
Other Asia—								
Ceylon	14,763	14,642	13,413	14,049	10,045	12,155	9,600	9,2
Hong Kong	18,889	21,197	26,321	31,043	38,911	51,040	58,354	72,9
India	43,479	52,664	36,121	43,424	40,093	42,774	38,304	40,9
Malaysia	27,740	31,634	34,566	40,272	41,453	22,298	25,986	32,8
Pakistan	2,561	2,270	4,211	3,654	4,287	4,441	4,767	7,0
Singapore	[15]	[15]	[15]	[15]	[15]	11,173	15,117	21,9
British East Indies, *n.e.s.*	511	[15]	[15]	[15]	[15]	[15]	[15]	[15]
Afghanistan	—	—	—	—	15	[13]	4	
Burma	50	102	276	39	106	105	76	
Cambodia and Laos	—	—	—	—	—	3	4	
People's Republic of China	4,521	5,147	9,420	14,445	20,594	25,074	23,439	27,4
Indonesia	173	152	1,393	2,365	1,158	1,066	445	2
Japan	125,359	130,471	174,388	230,144	253,051	304,768	360,180	495,7
Korea	99	380	473	1,468	[16]	[16]	[16]	[16]
Korea, North	[17]	[17]	[17]	[17]	—	2	1	[13]
Korea, South	[18]	[18]	[18]	[18]	1,764	4,568	11,241	12,1
Philippines	1,447	2,007	2,970	3,583	3,344	3,066	2,802	4,9
Portuguese Asia	77	428	1,204	2,069	33	27	24	
Taiwan	2,910	5,875	9,063	9,333	13,089	23,569	34,379	42,4

[1] Formerly Nyasaland. [2] Included with Rhodesia and Nyasaland. [3] See Zambia. [4] See Malawi. [5] Formerly Southern Rhodesia. [6] See Northern Rhodesia, Southern Rhodesia and Nyasaland. [7] See Zambia, Rhodesia and Malawi. [8] See Rhodesia. [9] See Tanzania. [10] Formerly Tanganyika. [11] Formerly Northern Rhodesia. [12] Included with French Africa, *n.e.s.* [13] Less than $500. [14] Included with French West Africa. [15] Included with Malaysia. [16] Trade with Korea included in Korea, North and Korea, South. [17] Trade with Korea, North included with Korea, South. [18] Trade with Korea, South included with Korea.

5.—Value of Imports, by Geographic Region and Country, 1962-69—continued

Region and Country	1962	1963	1964	1965	1966	1967	1968	1969
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Other Asia—concluded								
Thailand	1,031	582	582	899	2,431	4,868	2,023	995
Viet-Nam	7	1	4	2	1	6	1	5
Totals, Commonwealth and Preferential Countries	107,943	122,407	114,633	132,443	134,788	143,880	152,127	184,982
Totals, Other Countries	135,673	145,145	199,772	264,347	295,586	367,122	434,618	583,694
Totals, Other Asia	**243,616**	**267,552**	**314,405**	**396,790**	**430,375**	**511,002**	**586,745**	**768,676**
Oceania—								
Australia	45,216	55,650	59,827	47,372	59,573	64,471	75,990	96,285
Fiji	3,144	8,588	7,401	4,801	2,724	3,754	3,626	5,681
New Zealand	12,005	14,067	14,076	14,870	14,972	15,270	18,645	41,182
British Oceania, *n.e.s.*	—	5	6	—	1	3	2	1
French Oceania	—	[1]	3,559	5,092	6,612	6,116	7,534	2,842
United States Oceania	214	27	28	138	86	128	116	43
Totals, Commonwealth and Preferential Countries	60,365	78,310	81,310	67,044	77,270	83,498	98,262	143,149
Totals, Other Countries	214	27	3,586	5,229	6,698	6,244	7,650	2,885
Totals, Oceania	**60,578**	**78,338**	**84,896**	**72,273**	**83,968**	**89,742**	**105,912**	**146,034**
South America—								
Falkland Islands	—	—	—	—	—	2	5	[1]
Guyana	23,375	31,334	35,653	22,549	29,126	29,581	29,408	31,050
Argentina	5,649	5,352	5,938	5,400	4,882	5,188	5,358	8,644
Bolivia	957	70	289	384	175	56	68	139
Brazil	31,600	36,361	39,533	35,573	35,777	31,436	38,725	42,128
Chile	1,117	1,271	1,755	1,713	1,891	1,746	2,138	3,273
Colombia	15,658	13,576	14,889	16,812	11,619	13,384	12,191	14,565
Ecuador	8,611	7,625	9,353	8,546	7,873	8,129	8,549	8,542
French Guiana	—	1	—	—	18	138	19	—
Paraguay	378	831	547	455	477	668	355	1,100
Peru	3,225	3,770	7,792	9,053	3,517	2,276	3,156	2,835
Surinam	4,067	6,158	6,978	8,702	8,150	8,156	7,190	8,135
Uruguay	793	868	968	975	477	401	532	313
Venezuela	224,275	243,495	270,621	254,670	215,059	276,327	357,862	345,596
Totals, Commonwealth and Preferential Countries	23,375	31,334	35,653	22,549	29,126	29,583	29,413	31,051
Totals, Other Countries	296,329	319,379	358,664	342,283	289,916	347,904	436,145	435,271
Totals, South America	**319,703**	**350,714**	**394,317**	**364,832**	**319,041**	**377,487**	**465,559**	**466,322**
Central America and Antilles—								
Bahamas	217	426	412	533	1,214	2,221	3,107	4,495
Barbados	3,170	3,954	3,851	3,041	2,277	3,119	1,531	268
Bermuda	136	262	190	403	727	326	473	2,526
British Honduras	629	1,720	1,858	1,235	1,479	1,920	2,445	1,497
Jamaica	39,721	51,524	47,858	36,000	37,281	31,860	33,935	45,978
Leeward and Windward Islands	1,686	2,202	1,026	832	943	1,420	1,323	2,464
Trinidad and Tobago	14,100	15,871	20,738	16,670	16,050	18,750	19,927	17,742
Costa Rica	6,259	7,308	8,363	6,715	6,458	7,276	9,664	8,706
Cuba	2,803	13,041	3,464	5,304	5,629	6,335	5,114	7,759
Dominican Republic	1,912	2,281	5,093	2,050	1,311	957	1,131	603
El Salvador	1,848	1,960	3,356	2,696	2,110	2,022	3,307	2,093
French West Indies	326	278	263	552	48	30	4	23
Guatemala	1,796	2,557	2,422	2,879	2,686	2,484	3,078	4,949
Haiti, Republic of	566	1,159	2,056	1,076	944	930	1,229	692
Honduras, Republic of	7,617	6,868	7,670	10,193	11,440	11,668	10,474	12,645
Mexico	24,416	23,734	23,186	27,247	33,539	29,535	52,167	64,067
Netherlands Antilles	35,856	35,999	34,885	43,341	38,511	60,293	49,658	50,395
Nicaragua	107	383	727	247	437	1,878	2,245	1,953
Panama	8,321	11,057	15,095	19,414	16,066	14,798	12,524	13,513
Puerto Rico	2,713	2,399	3,554	2,759	4,404	6,210	2,542	5,098
United States Virgin Islands	[1]	[1]	3	—	4	4	—	2

[1]Less than $500.

5.—Value of Imports, by Geographic Region and Country, 1962-69—concluded

Region and Country	1962	1963	1964	1965	1966	1967	1968	1969
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Central America and Antilles—concluded								
Totals, Commonwealth and Preferential Countries	59,658	75,960	75,933	58,714	59,971	59,616	62,741	74,
Totals, Other Countries	94,541	109,025	110,137	124,471	123,586	144,419	153,135	172,
Totals, Central America and Antilles	**154,199**	**184,985**	**186,070**	**183,185**	**183,557**	**204,034**	**215,876**	**247,**
North America—								
Greenland	111	106	110	—	16	256	114	
St. Pierre and Miquelon	118	84	189	76	174	91	159	
United States	4,299,539	4,444,556	5,164,285	6,044,831	7,135,611	8,016,341	9,048,372	10,312,
Totals, North America	**4,299,769**	**4,444,746**	**5,164,585**	**6,044,907**	**7,135,801**	**8,016,688**	**9,048,645**	**10,312,**
Grand Totals, Commonwealth and Preferential Countries	**881,563**	**927,620**	**979,845**	**991,838**	**1,061,035**	**1,108,342**	**1,149,082**	**1,362,**
Grand Totals, Other Countries	**5,376,213**	**5,630,589**	**6,507,862**	**7,641,310**	**8,805,405**	**9,966,857**	**11,208,899**	**12,838,**
Grand Totals, All Countries	**6,257,776**	**6,558,209**	**7,487,707**	**8,633,148**	**9,866,439**	**11,075,199**	**12,357,982**	**14,201,**

6.—Values of Dutiable and Free Imports, by Geographic Region and Leading Countries, 1967-69

Region and Country	1967			1968			1969		
	Dutiable	Free	Total	Dutiable	Free	Total	Dutiable	Free	Total
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Western Europe	**917,030**	**653,847**	**1,570,877**	**910,771**	**739,195**	**1,649,966**	**1,123,807**	**812,819**	**1,936,6**
United Kingdom	275,170	397,880	673,050	281,326	414,759	696,085	351,614	439,360	790,9
Austria	11,575	8,140	19,715	13,952	14,612	28,563	17,015	21,863	38,8
Belgium and Luxembourg	45,631	18,988	64,620	40,984	16,536	57,520	44,826	16,110	60,9
Denmark	18,891	8,164	27,055	17,907	8,486	26,393	23,452	8,940	32,3
France	86,140	43,940	130,080	74,848	46,800	121,647	97,231	56,481	153,7
Germany, Federal Republic	188,885	67,995	256,879	209,409	89,460	298,869	251,311	103,402	354,7
Italy	99,224	11,045	110,269	97,870	16,622	114,492	122,841	18,276	141,1
Netherlands	47,986	16,796	64,783	44,686	24,366	69,052	50,503	28,175	78,6
Norway	10,187	23,573	33,761	9,498	29,705	39,204	9,852	35,043	44,8
Spain	10,926	6,168	17,093	15,237	10,390	25,626	21,644	7,070	28,7
Sweden	50,465	25,777	76,242	41,200	36,890	78,091	50,538	33,968	84,5
Switzerland	48,216	17,806	66,022	42,904	21,422	64,326	51,021	32,905	83,9
Eastern Europe	**63,662**	**18,764**	**82,426**	**62,338**	**19,118**	**81,457**	**70,016**	**11,494**	**81,5**
Czechoslovakia	27,115	1,414	28,529	25,062	2,305	27,367	28,451	1,594	30,0
Poland	14,201	781	14,982	12,757	594	13,351	11,446	962	12,4
Union of Soviet Socialist Republics	7,864	15,151	23,015	7,229	14,431	21,659	5,681	6,620	12,3
Middle East	**6,898**	**91,956**	**98,854**	**8,262**	**86,605**	**94,868**	**12,640**	**104,758**	**117,3**
People's Republic of Southern Yemen	13	2	15	—	18	18	370	34	4
Cyprus	86	219	306	68	277	345	68	231	2
Trucial States	—	1	1	—	4,626	4,626	—	14,922	14,9
Iran	825	32,404	33,229	432	33,138	33,569	860	29,316	30,1
Iraq	114	9,299	9,413	59	495	554	44	8,794	8,8
Israel	4,467	4,743	9,210	6,802	6,087	12,889	9,482	5,585	15,0
Libya	—	11,263	11,263	—	[1]	[1]	[1]	8,873	8,8

[1] Less than $500.

6.—Values of Dutiable and Free Imports, by Geographic Region and Leading Countries, 1967-69—concluded

Region and Country	1967			1968			1969		
	Dutiable	Free	Total	Dutiable	Free	Total	Dutiable	Free	Total
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Other Africa	**31,628**	**92,461**	**124,089**	**28,492**	**80,463**	**108,955**	**42,952**	**81,913**	**124,864**
Ghana	1,992	5,958	7,950	128	10,945	11,073	162	7,387	7,549
Kenya	247	7,162	7,409	66	4,286	4,352	71	5,553	5,624
Mauritius and Dependencies	2,881	38	2,919	7,135	836	7,972	14,128	1	14,129
Nigeria	4,083	32,477	36,560	58	16,907	16,966	147	22,056	22,203
Republic of South Africa	19,010	18,050	37,060	20,335	18,979	39,315	22,998	22,947	45,944
Uganda	20	9,699	9,719	2	9,928	9,930	882	5,776	6,657
Angola	1,185	4,738	5,924	—	7,743	7,743	—	6,175	6,175
Ivory Coast	212	487	700	251	230	481	832	3,878	4,710
Other Asia	**397,078**	**113,925**	**511,092**	**461,946**	**124,800**	**586,745**	**611,194**	**157,482**	**768,676**
Hong Kong	50,026	1,014	51,040	56,765	1,589	58,354	70,408	2,534	72,942
India	14,323	28,450	42,774	8,126	30,178	38,304	8,743	32,162	40,905
Malaysia	842	21,456	22,298	2,452	23,534	25,986	2,768	30,056	32,824
Singapore	3,002	8,171	11,173	3,173	11,943	15,117	4,163	17,805	21,967
People's Republic of China	16,887	8,187	25,074	16,072	7,367	23,439	18,893	8,529	27,421
Japan	279,964	24,805	304,768	326,429	33,750	360,180	447,815	47,889	495,704
Korea, South	4,320	247	4,568	10,853	388	11,241	11,792	401	12,192
Taiwan	22,890	678	23,569	33,257	1,122	34,379	41,261	1,195	42,456
Oceania	**45,556**	**44,186**	**89,742**	**59,634**	**55,278**	**105,912**	**98,242**	**47,792**	**146,034**
Australia	35,094	29,377	64,471	36,988	39,002	75,990	58,994	37,291	96,285
Fiji	3,729	25	3,754	3,014	612	3,626	5,600	81	5,681
New Zealand	6,604	8,666	15,270	10,516	8,129	18,645	33,604	7,578	41,182
French Oceania	[1]	6,116	6,116	—	7,534	7,534	—	2,842	2,842
South America	**97,112**	**280,374**	**377,487**	**104,292**	**361,267**	**465,559**	**96,636**	**369,685**	**466,322**
Guyana	5,519	24,062	29,581	3,706	25,702	29,408	3,890	27,161	31,050
Argentina	3,925	1,263	5,188	3,652	1,706	5,358	6,190	2,454	8,644
Brazil	22,160	9,276	31,436	5,950	32,775	38,725	7,236	34,893	42,128
Colombia	10,665	2,718	13,384	2,621	9,570	12,191	3,010	11,555	14,565
Ecuador	8,077	52	8,129	8,059	491	8,549	7,089	1,453	8,542
Surinam	13	8,143	8,156	34	7,156	7,190	8	8,127	8,135
Venezuela	43,569	232,758	276,327	78,572	279,290	357,862	67,521	278,075	345,596
Central America and Antilles	**137,808**	**66,227**	**204,034**	**116,262**	**99,614**	**215,876**	**135,244**	**112,224**	**247,468**
Jamaica	4,288	27,572	31,860	5,019	28,916	33,935	3,645	42,333	45,978
Trinidad and Tobago	6,616	12,134	18,750	8,138	11,789	19,927	11,042	6,701	17,742
Costa Rica	7,035	241	7,276	7,598	2,066	9,664	7,103	1,603	8,706
Cuba	5,273	1,062	6,335	3,944	1,170	5,114	6,977	782	7,759
Honduras, Republic of	11,624	44	11,668	10,368	106	10,474	12,307	338	12,645
Mexico	12,638	16,897	29,535	11,505	40,662	52,167	20,112	43,955	64,067
Netherlands Antilles	59,974	319	60,293	49,461	196	49,658	50,125	270	50,395
Panama	14,784	13	14,798	12,319	205	12,524	13,103	409	13,513
North America	**3,400,149**	**4,616,539**	**8,016,688**	**3,286,262**	**5,762,382**	**9,048,645**	**3,714,645**	**6,598,089**	**10,312,735**
United States	3,400,081	4,616,260	8,016,341	3,286,197	5,762,175	9,048,372	3,714,632	6,598,007	10,312,638
Totals, Commonwealth and Preferential Countries	**447,547**	**660,795**	**1,108,342**	**460,068**	**689,015**	**1,149,082**	**612,743**	**759,146**	**1,362,890**
Totals, Other Countries	**4,649,372**	**5,317,484**	**9,966,857**	**4,569,192**	**6,639,707**	**11,208,899**	**5,292,633**	**7,546,110**	**12,838,743**
Grand Totals, Imports	**5,096,920**	**5,978,279**	**11,075,199**	**5,029,260**	**7,328,722**	**12,357,982**	**5,905,376**	**8,296,256**	**14,201,632**

[1] Less than $500.

Section 4.—Trade by Commodity

This Section provides detailed information on the composition of Canada's exports and imports for 1968 and 1969. Table 7 shows exports and re-exports to and imports from all countries, the United Kingdom and the United States, classified by commodity section; Table 8 gives detailed statistics of all commodities of any importance exported from Canada to all countries, to the United Kingdom and to the United States; and detailed statistics for imports into Canada by section and commodity appear in Table 9.

7.—Exports to and Imports from All Countries, the United Kingdom and the United States, by Section, 1968 and 1969

Section	Domestic Exports		Re-exports		Imports	
	1968	1969	1968	1969	1968	1969
	$'000	$'000	$'000	$'000	$'000	$'000
All Countries	**13,250,960**	**14,441,513**	**351,078**	**427,617**	**12,357,982**	**14,201,63**
Live animals	59,365	54,404	249	235	15,554	18,71
Food, feed, beverages and tobacco	1,553,757	1,409,807	11,587	21,430	902,633	1,043,93
Crude materials, inedible	2,467,578	2,463,323	7,574	10,403	1,126,744	1,054,75
Fabricated materials, inedible	4,855,098	5,162,695	60,384	77,793	2,434,586	2,905,37
End products, inedible	4,277,490	5,316,078	268,205	314,252	7,619,554	8,986,86
Special transactions—trade	37,672	35,205	6,079	3,534	258,911	191,99
United Kingdom	**1,209,567**	**1,096,480**	**15,941**	**16,865**	**696,085**	**790,97**
Live animals	379	59	—	—	159	24
Food, feed, beverages and tobacco	270,999	258,614	590	1,671	45,915	49,31
Crude materials, inedible	276,006	236,732	363	1,044	28,296	27,75
Fabricated materials, inedible	591,268	531,073	1,837	2,607	183,839	198,82
End products, inedible	70,512	69,512	13,131	11,543	421,821	501,60
Special transactions—trade	404	491	20	—	16,055	13,22
United States	**8,922,526**	**10,215,400**	**288,441**	**340,477**	**9,048,372**	**10,312,63**
Live animals	50,674	45,825	229	164	14,533	17,27
Food, feed, beverages and tobacco	488,738	556,090	9,513	18,036	454,200	508,28
Crude materials, inedible	1,372,719	1,370,780	5,132	8,501	535,828	420,89
Fabricated materials, inedible	3,350,775	3,573,320	51,921	68,355	1,580,384	1,911,58
End products, inedible	3,628,806	4,641,973	215,780	242,316	6,244,221	7,306,94
Special transactions—trade	30,814	27,413	5,866	3,105	219,206	147,67

8.—Domestic Exports from Canada to All Countries, to the United Kingdom and to the United States, by Section and Commodity, 1968 and 1969

Section and Commodity	All Countries		United Kingdom		United States	
	1968	1969	1968	1969	1968	1969
	$'000	$'000	$'000	$'000	$'000	$'000
Live Animals	**59,365**	**54,404**	**379**	**59**	**50,674**	**45,825**
Food, Feed, Beverages and Tobacco	**1,553,757**	**1,409,807**	**270,999**	**258,614**	**488,738**	**556,090**
Meat, fresh, chilled or frozen	57,427	65,096	4,789	4,161	47,154	52,709
Other meat and meat preparations	12,113	11,730	166	56	6,984	7,548
Fish, whole or dressed, fresh or frozen	49,089	56,795	4,851	4,959	34,858	37,221
Fish, fillets and blocks, fresh or frozen	77,461	82,922	3,417	479	73,018	81,694
Fish, preserved, except canned	24,817	25,246	347	1	7,890	8,095
Fish, canned	38,339	37,780	19,042	21,781	4,299	2,527
Shellfish	44,827	49,605	1,402	1,288	41,380	44,168
Dairy produce, eggs and honey	33,210	37,082	16,131	9,986	2,718	3,151
Barley	40,043	30,427	3,899	13,960	8,332	8,659
Wheat	684,469	472,703	105,972	88,082	810	2,050
Other cereals, unmilled	14,742	10,239	877	813	4,733	4,349
Wheat flour	57,940	53,489	5,842	4,423	981	686
Other cereals, milled	10,635	10,427	203	292	2,012	1,793
Cereal preparations	13,864	17,783	290	100	12,016	15,882
Fruits and fruit preparations	29,047	25,171	4,813	3,422	20,812	18,383
Vegetables and vegetable preparations	44,577	50,361	19,522	21,089	10,563	12,202
Sugar and sugar preparations	18,461	19,136	331	174	14,797	15,497
Other foods and materials for foods	24,450	29,601	3,867	4,622	9,647	14,425
Oil seed cake and meal	16,274	14,921	16,130	14,191	62	181

.—Domestic Exports from Canada to All Countries, to the United Kingdom and to the United States, by Section and Commodity, 1968 and 1969—continued

Section and Commodity	All Countries		United Kingdom		United States	
	1968	1969	1968	1969	1968	1969
	$'000	$'000	$'000	$'000	$'000	$'000
od, Feed, Beverages and Tobacco—concluded						
)ther feeds of vegetable origin	15,253	18,999	372	155	11,605	15,776
)ther fodder and feed	25,042	31,250	6,388	7,263	14,207	18,034
Vhisky	158,253	189,074	478	364	152,901	183,331
)ther beverages	5,959	7,115	14	16	5,562	6,500
'obacco	57,467	62,855	51,857	56,935	1,396	1,227
ıde Materials, Inedible	**2,467,578**	**2,463,323**	**276,006**	**236,732**	**1,372,719**	**1,370,780**
Raw hides and skins	21,242	25,037	1,035	806	5,587	5,817
Fur skins, undressed	33,223	33,377	7,400	9,651	18,734	14,725
)ther crude animal products	14,077	13,181	271	226	13,050	12,393
eeds for sowing	10,409	12,576	1,272	1,232	7,131	9,644
Flaxseed	38,014	52,410	8,201	6,864	3	6
Rapeseed	31,908	31,182	—	704	250	57
)ther oil seeds, oil nuts and oil kernels	13,690	10,720	4,725	1,646	4,209	4,613
)ther crude vegetable products	19,077	20,157	178	110	16,722	18,012
Pulpwood	25,391	24,489	2,105	1,489	17,576	16,489
Pulpwood chips	11,204	7,981	857	944	10,347	7,037
)ther crude wood materials	29,580	25,117	365	115	16,626	17,026
Textile and related fibres	9,114	10,187	397	220	3,973	3,693
ron ores and concentrates	443,202	333,131	37,586	29,866	339,335	231,146
Scrap iron and steel	15,126	30,329	10	20	10,361	14,188
Aluminum ores, concentrates and scrap	17,556	19,637	100	86	10,830	12,001
Copper in ores, concentrates and scrap	233,343	233,727	3,314	4,025	19,936	17,573
Lead in ores, concentrates and scrap	22,991	26,179	1,167	1,514	7,049	12,017
Nickel in ores, concentrates and scrap	261,030	225,312	104,678	88,582	54,816	45,148
Precious metals in ores, concentrates and scrap	85,369	75,669	38,755	35,186	25,617	28,279
Zinc in ores, concentrates and scrap	99,593	102,611	4,105	2,794	42,960	47,174
Radioactive ores and concentrates	26,067	24,507	26,064	14,966	3	477
)ther metals in ores, concentrates and scrap	58,219	67,574	14,195	14,968	7,030	9,816
Crude petroleum	446,413	525,780	—	—	446,413	525,780
Natural gas	153,752	176,188	—	—	153,752	176,188
Coal and other crude bituminous substances	17,546	9,753	—	—	2,755	2,215
Asbestos, unmanufactured	192,896	216,275	16,942	16,551	70,228	72,573
Sulphur	77,482	63,846	493	714	28,720	27,283
)ther crude non-metallic minerals	50,281	56,566	1,644	3,144	31,747	33,043
)ther waste and scrap materials	9,782	9,829	146	309	6,958	6,366
)ricated Materials, Inedible	**4,855,098**	**5,162,695**	**591,268**	**531,073**	**3,350,775**	**3,573,320**
Leather and leather fabricated materials	11,891	10,880	3,154	3,021	6,490	6,535
Lumber, softwood	623,414	664,759	45,872	35,732	480,695	528,070
Lumber, hardwood	32,887	35,845	2,686	1,617	28,791	32,151
Shingles and shakes	46,315	48,135	127	211	45,516	47,067
)ther sawmill products	7,323	9,457	650	422	6,571	8,606
Veneer	33,142	29,291	292	577	28,770	25,077
Plywood	52,941	50,784	33,018	31,694	6,984	6,479
)ther wood fabricated materials	7,780	9,409	1,344	1,473	5,542	7,337
Wood pulp and similar pulp	627,874	753,488	38,013	36,584	424,639	516,879
Newsprint paper	989,831	1,125,801	54,862	60,616	826,809	919,877
)ther paper for printing	24,271	35,884	1,804	1,124	20,498	33,044
Paperboard	27,668	31,836	19,612	19,118	1,577	2,114
)ther paper	48,814	55,225	17,421	15,857	15,062	22,589
Yarn, thread, cordage, twine and rope	14,133	15,936	2,329	5,154	6,839	4,811
Cotton broad woven fabrics	16,519	12,622	12,130	8,055	1,433	931
)ther broad woven fabrics	7,803	8,110	3,103	2,365	1,751	2,054
)ther textile fabricated materials	19,054	22,525	1,606	2,216	9,442	10,460
Oils, fats, waxes, extracts and derivatives	20,619	21,236	9,004	7,927	3,262	3,928
Chemical elements	15,165	32,021	2,214	11,973	10,734	16,871
)ther inorganic chemicals	49,922	54,655	10,431	8,142	32,695	37,354
Organic chemicals	67,677	65,957	17,138	14,904	34,628	35,686
Fertilizers and fertilizer materials	168,882	171,918	38	117	125,368	130,386
Synthetic rubber and plastics materials	65,459	67,948	13,427	12,480	23,032	26,170
Plastics, basic shapes and forms	16,175	19,660	1,545	1,992	7,417	8,319
)ther chemical products	35,011	42,844	1,912	1,973	25,609	31,847
Petroleum and coal products	50,432	58,856	354	335	42,451	47,694
Ferro-alloys	5,730	6,904	3,112	3,405	1,005	3,124

8.—Domestic Exports from Canada to All Countries, to the United Kingdom and to the United States, by Section and Commodity, 1968 and 1969—continued

Section and Commodity	All Countries		United Kingdom		United States	
	1968	1969	1968	1969	1968	1969
	$'000	$'000	$'000	$'000	$'000	$'000
Fabricated Materials, Inedible—concluded						
Primary iron and steel	66,140	67,741	4,433	2,619	52,027	46,4
Castings and forgings, steel	43,599	55,024	13	8	41,813	52,4
Bars and rods, steel	28,274	31,522	1,266	1,473	23,575	23,9
Plate, sheet and strip, steel	109,136	75,185	6,738	4,791	68,424	47,7
Railway track material	7,691	6,476	—	2	2,989	2,8
Other iron and steel and alloys	79,141	57,879	479	187	74,016	51,7
Aluminum, including alloys	445,128	474,752	73,227	74,400	242,243	214,5
Copper and alloys	378,216	300,904	121,388	93,616	186,142	132,1
Lead, including alloys	32,160	28,393	10,487	10,190	14,460	13,5
Nickel and alloys	245,433	226,079	38,620	21,958	187,442	184,6
Precious metals, including alloys	66,012	69,394	779	301	61,630	65,8
Zinc, including alloys	77,638	76,849	23,473	19,710	31,297	40,3
Other non-ferrous metals and alloys	20,963	22,032	5,272	5,023	12,825	13,2
Metal fabricated basic products	70,307	84,903	3,919	2,969	48,473	65,9
Abrasive basic products	38,465	45,616	2,122	2,324	34,408	40,5
Other non-metallic mineral basic products	27,547	37,485	786	801	20,903	30,2
Electricity	14,321	18,497	—	—	14,321	18,4
Other fabricated materials, inedible	18,193	21,977	1,069	1,617	10,173	13,0
End Products, Inedible	**4,277,490**	**5,316,078**	**70,512**	**69,512**	**3,628,806**	**4,641,9**
Engines and turbines, general purpose	18,643	24,525	757	565	9,274	11,5
Electric generators and motors	16,317	12,717	1,030	660	8,367	9,1
Other general-purpose industrial machinery	55,417	63,041	2,666	1,805	30,918	46,3
Materials handling machinery and equipment	47,125	71,028	290	480	36,794	54,2
Drilling, excavating, mining machinery	25,118	40,119	672	1,195	15,026	21,6
Metalworking machinery	26,285	29,465	1,103	1,577	20,453	24,1
Woodworking machinery and equipment	16,727	21,539	777	690	8,859	12,3
Construction machinery and equipment	17,925	23,803	484	130	9,213	13,5
Plastics industry machinery and equipment	25,848	27,611	205	746	24,763	25,7
Pulp and paper industries machinery	9,733	15,645	297	148	6,847	11,5
Other special industry machinery	36,209	39,423	2,743	2,465	23,397	25,6
Soil preparation, seeding, fertilizing machinery	23,360	26,265	6	14	22,616	25,4
Combine reaper-threshers and parts	79,607	78,185	649	925	74,203	72,9
Other haying and harvesting machinery	33,048	35,326	419	[1]	31,302	33,6
Other agricultural machinery and equipment	13,734	16,351	374	193	12,511	15,1
Tractors	18,800	24,372	320	156	17,804	23,7
Railway and street railway rolling-stock	13,361	34,498	1	2	5,068	24,0
Passenger automobiles and chassis	1,381,918	1,794,742	310	1,562	1,281,942	1,715,8
Other motor vehicles	487,073	696,348	74	59	439,108	653,5
Motor vehicle engines and parts	246,711	289,265	710	1,555	231,143	275,3
Motor vehicle parts, except engines	556,154	722,935	1,828	3,530	510,163	652,1
Ships and boats	32,109	27,277	1,514	1,834	26,514	20,2
Aircraft, complete with engines	62,388	62,152	6,561	381	18,411	18,3
Aircraft engines and parts	107,288	102,718	1,028	1,304	88,486	84,2
Aircraft parts, except engines	199,751	159,665	564	1,131	178,950	139,9
Other vehicles	4,524	3,903	6	[1]	4,466	3,8
Rubber tires and tubes	11,800	10,189	155	24	8,154	7,3
Television and radio sets and phonographs	29,717	30,993	98	124	28,762	29,9
Other communication and related equipment	164,665	169,266	3,390	4,035	121,375	121,3
Heating and refrigeration equipment	16,839	20,737	2,442	1,888	10,415	14,4
Cooking equipment for food	3,880	3,961	2,006	1,793	694	1,0
Electric lighting and distribution equipment	53,645	61,828	2,342	2,657	34,317	44,8
Navigation equipment and parts	37,320	39,814	1,169	1,947	29,084	31,3
Other measuring, controlling, laboratory, medical and optical equipment	45,126	57,510	5,199	6,134	27,286	35,9
Hand tools and miscellaneous cutlery	8,675	10,608	1,250	1,048	3,169	4,5
Office machines and equipment	49,865	71,152	5,406	7,080	23,764	46,1
Other equipment and tools	35,427	52,441	3,405	2,766	22,408	39,5
Apparel and apparel accessories	43,838	68,487	4,362	2,495	25,572	48,7
Footwear	7,316	9,765	286	302	6,481	9,0
Toys, games, sporting, recreation equipment	14,773	24,852	926	855	11,212	19,7

[1] Less than $500.

8.—Domestic Exports from Canada to All Countries, to the United Kingdom and to the United States, by Section and Commodity, 1968 and 1969—concluded

Section and Commodity	All Countries		United Kingdom		United States	
	1968	1969	1968	1969	1968	1969
	$'000	$'000	$'000	$'000	$'000	$'000
nd Products, Inedible—concluded						
Other personal and household goods	21,469	27,995	3,306	2,851	9,168	13,626
Medicinal and pharmaceutical products	17,089	22,476	766	592	3,192	3,563
Medical, ophthalmic, orthopaedic supplies	3,134	3,602	179	237	777	848
Printed matter	18,501	24,033	923	1,252	14,698	19,505
Photographic goods	11,843	17,331	783	1,612	7,517	10,357
Firearms, ammunition and ordnance	72,415	78,713	1,711	2,420	66,354	73,216
Containers and closures	16,234	19,105	366	322	12,277	15,087
Prefabricated buildings and structures	16,031	21,461	372	300	12,351	19,156
Other end products	22,712	26,842	4,282	3,671	13,180	18,057
pecial Transactions—Trade	**37,672**	**35,205**	**404**	**491**	**30,814**	**27,413**
Shipments valued at less than $100 each	15,717	15,306	327	283	13,538	13,246
Other special transactions—trade	21,955	19,899	77	208	17,276	14,166
Totals, Domestic Exports	**13,250,960**	**14,441,513**	**1,209,567**	**1,096,480**	**8,922,526**	**10,215,400**

9.—Imports into Canada from All Countries, from the United Kingdom and from the United States, by Section and Commodity, 1968 and 1969

Section and Commodity	All Countries		United Kingdom		United States	
	1968	1969	1968	1969	1968	1969
	$'000	$'000	$'000	$'000	$'000	$'000
ive Animals	**15,554**	**18,711**	**159**	**245**	**14,533**	**17,270**
ood, Feed, Beverages and Tobacco	**902,633**	**1,013,938**	**45,915**	**49,313**	**454,200**	**508,284**
Meat, fresh, chilled or frozen	47,975	98,612	410	646	19,025	33,698
Other meat and meat preparations	20,346	24,705	319	413	11,382	12,904
Fish and marine animals	34,051	41,186	745	1,002	16,277	23,309
Dairy produce, eggs and honey	25,916	30,089	893	1,128	10,562	11,488
Indian corn, shelled	40,037	37,413	—	—	40,036	37,413
Other cereals and cereal preparations	34,851	36,429	5,216	5,106	26,272	27,623
Bananas and plantains, fresh	35,214	35,141	—	—	8	—
Grapes, fresh	24,593	27,153	—	—	22,889	25,462
Oranges, mandarins and tangerines, fresh	33,206	32,269	7	6	25,222	25,802
Other fresh fruits and berries	48,280	54,679	—	3	44,459	50,063
Fruits, dried or dehydrated	16,380	17,923	49	60	7,216	7,292
Orange juice and concentrates	20,721	23,126	[1]	2	15,253	15,308
Other fruit juices and concentrates	8,492	11,385	336	465	6,836	8,271
Fruits and products, canned	31,629	33,552	847	871	15,952	18,338
Other fruits and fruit preparations	11,669	14,420	39	187	2,491	3,207
Nuts, except oil nuts	19,106	20,357	311	451	7,711	8,097
Tomatoes, fresh	23,187	22,351	3	—	14,336	11,930
Other fresh vegetables	63,403	68,298	11	1	61,071	65,507
Other vegetables and vegetable preparations	29,677	31,315	733	808	13,295	14,397
Raw sugar	46,411	70,287	—	—	—	—
Refined sugar, molasses and syrups	8,444	7,352	637	81	2,634	3,190
Sugar preparations and confectionery	16,775	17,936	8,490	9,191	3,494	3,372
Cocoa and chocolate	27,548	24,764	2,691	2,221	2,802	5,724
Coffee	83,302	82,105	1,402	26	16,379	17,697
Tea	23,838	22,220	4,493	4,739	881	717
Other foods and materials for foods	42,516	48,033	1,875	2,132	27,842	31,708
Oil seed cake and meal	22,702	25,097	—	2	22,702	25,095
Other fodder and feed	7,253	9,868	48	65	6,661	8,957
Distilled alcoholic beverages	26,620	34,119	14,344	17,358	2,672	3,448
Other beverages	18,625	31,141	1,440	1,674	1,445	1,992
Tobacco	9,868	10,610	574	676	6,392	6,277
rude Materials, Inedible	**1,126,744**	**1,051,753**	**28,296**	**27,755**	**535,828**	**420,890**
Fur skins, undressed	19,843	23,457	2,692	2,636	7,779	11,071
Other crude animal products	17,903	20,945	1,053	959	14,439	17,334
Soybeans	31,071	40,960	—	—	31,068	40,956
Other oil seeds, oil nuts and oil kernels	12,890	18,289	1	40	7,768	8,880

[1] Less than $500.

9.—Imports into Canada from All Countries, from the United Kingdom and from the United States, by Section and Commodity, 1968 and 1969—continued

Section and Commodity	All Countries		United Kingdom		United States	
	1968	1969	1968	1969	1968	1969
	$'000	$'000	$'000	$'000	$'000	$'000
Crude Materials, Inedible—concluded						
Rubber and allied gums, natural	17,043	26,587	23	103	973	1,58
Other crude vegetable products	23,009	24,693	636	132	16,824	18,93
Crude wood materials	29,138	29,370	—	1	29,120	29,31
Wool and fine animal hair	29,325	27,919	15,260	15,474	2,217	2,04
Cotton	55,997	52,979	99	127	18,396	20,89
Man-made fibres	21,914	22,928	5,162	4,470	15,289	16,66
Other textile fibres	5,400	5,207	59	55	1,395	88
Iron ores and concentrates	34,611	29,450	—	—	30,465	27,03
Scrap iron and steel	14,050	18,056	[1]	—	14,049	18,04
Aluminum ores, concentrates and scrap	83,668	102,942	10	[1]	16,859	22,26
Other metals in ores, concentrates, scrap	88,792	42,782	837	880	69,186	22,04
Coal	160,390	83,826	—	—	160,311	83,82
Crude petroleum	372,586	393,453	—	—	1,573	72
Other crude bituminous substances	35,811	16,298	117	—	35,677	16,27
Abrasives, natural	9,213	10,595	569	426	7,707	8,91
Phosphate rock	18,799	14,858	—	—	18,604	14,61
Other crude non-metallic minerals	36,066	38,351	1,251	1,997	27,915	28,71
Other waste and scrap materials	9,224	10,807	526	454	8,215	9,85
Fabricated Materials, Inedible	**2,434,586**	**2,905,374**	**183,839**	**198,826**	**1,580,384**	**1,911,58**
Leather and leather fabricated materials	29,313	28,251	11,458	10,807	14,884	14,33
Rubber fabricated materials	43,328	55,284	1,655	1,460	38,279	50,39
Lumber	44,540	51,040	2	18	38,363	44,49
Veneer, plywood and wood building boards	33,190	48,694	134	283	13,091	20,96
Other wood fabricated materials	15,511	19,291	227	337	12,742	15,51
Wood pulp and similar pulp	7,485	6,910	6	3	5,933	5,27
Paper and paperboard	70,439	81,306	1,130	1,554	65,996	76,55
Cotton yarn and thread	15,090	18,061	3,588	3,714	5,014	5,33
Man-made fibre yarn and thread	26,983	41,099	1,244	2,809	14,015	20,15
Other yarn and thread	17,475	13,670	5,929	5,803	7,089	3,06
Cordage, twine and rope	8,288	7,549	799	910	1,270	1,29
Broad woven fabrics, wool and hair	25,111	25,505	12,927	11,704	2,032	2,96
Broad woven fabrics, cotton	56,743	62,044	1,478	1,466	27,460	29,46
Broad woven fabrics, man-made	30,010	37,854	1,307	1,548	12,219	12,90
Broad woven fabrics, mixed fibres	47,032	57,026	3,943	4,426	24,718	30,76
Other broad woven fabrics	24,291	28,352	737	764	1,868	2,07
Coated or impregnated fabrics	35,123	40,706	2,593	3,612	27,858	32,07
Other textile fabricated materials	50,532	71,068	7,121	12,846	29,758	36,19
Vegetable oils and fats, except essential oils	27,753	28,498	2,698	3,347	6,528	8,71
Other oils, fats, waxes, extracts, derivatives	24,703	29,471	620	739	21,992	26,20
Inorganic chemicals	67,710	77,731	6,622	6,556	54,225	62,49
Organic chemicals	129,036	138,030	11,893	10,537	87,730	92,58
Fertilizers and fertilizer materials	12,179	11,130	17	41	11,146	10,29
Synthetic and reclaimed rubber	29,381	38,630	109	1,096	27,747	34,09
Plastics materials, not shaped	99,433	114,830	3,981	3,086	85,352	100,24
Plastic film and sheet	44,411	50,096	2,461	2,927	35,767	41,36
Other plastics basic shapes and forms	29,358	37,910	757	786	26,243	33,85
Dyestuffs, except dyeing extracts	21,293	24,198	2,157	3,077	8,157	8,51
Pigments, lakes and toners	17,539	19,082	949	1,154	14,383	14,79
Paints and related products	13,073	15,973	590	521	12,313	15,13
Other chemical products	112,194	134,683	5,011	4,970	97,702	112,78
Fuel oil	142,497	131,436	1,772	253	16,752	17,43
Lubricating oils and greases	23,381	24,624	208	218	21,992	21,06
Coke of petroleum and coal	16,073	20,918	—	—	14,933	19,08
Other petroleum and coal products	34,033	46,546	1,704	1,822	15,500	18,50
Bars and rods, steel	42,172	67,837	2,781	3,732	12,222	30,35
Plate, sheet and strip, steel	103,175	155,519	7,408	5,861	63,059	100,52
Structural shapes and sheet piling, steel	37,559	51,014	7,824	8,786	12,377	21,05
Pipes and tubes, iron and steel	57,696	60,931	5,522	4,926	31,841	35,35
Wire and wire rope, steel	20,224	27,582	6,812	8,185	4,001	7,76
Other iron and steel and alloys	64,608	98,085	2,400	3,409	51,659	82,17
Aluminum, including alloys	89,816	84,972	4,393	3,698	77,479	75,56
Copper and alloys	20,072	46,751	4,245	4,928	14,291	39,59
Nickel and alloys	38,582	46,556	976	716	11,491	15,42
Precious metals, including alloys	53,014	48,189	16,814	9,635	34,780	38,52
Tin, including alloys	14,957	18,116	21	226	3,402	2,39

[1] Less than $500.

9.—Imports into Canada from All Countries, from the United Kingdom and from the United States, by Section and Commodity, 1968 and 1969—continued

Section and Commodity	All Countries		United Kingdom		United States	
	1968	1969	1968	1969	1968	1969
	$'000	$'000	$'000	$'000	$'000	$'000
abricated Materials, Inedible— concluded						
Other non-ferrous metals and alloys	25,095	25,872	390	411	20,064	19,195
Bolts, nuts and screws	45,880	61,195	805	907	41,053	55,676
Other basic hardware	64,369	80,612	2,776	3,541	54,136	67,482
Chain	12,104	15,376	1,824	2,216	6,879	7,681
Valves	31,665	38,812	2,367	3,881	25,886	30,415
Pipe fittings	27,351	31,245	1,917	2,266	20,369	23,360
Other metal fabricated basic products	57,238	70,163	3,798	6,900	48,845	55,755
Clay bricks, clay tiles and refractories	34,577	38,459	2,132	2,237	26,982	27,331
Sheet and plate glass	20,974	26,340	712	4,532	7,583	8,541
Other glass basic products	24,857	27,774	1,422	1,936	20,637	22,372
Abrasive basic products	16,754	20,139	280	419	14,597	17,589
Natural and synthetic gem stones	17,010	20,213	1,618	2,046	2,171	2,337
Other non-metallic mineral basic products	26,330	33,043	2,562	2,916	20,291	25,500
Electricity	11,602	8,674	—	—	11,602	8,674
Other fabricated materials, inedible	52,374	64,411	4,214	5,321	41,636	49,968
nd Products, Inedible	**7,619,554**	**8,986,865**	**421,821**	**501,608**	**6,244,221**	**7,306,940**
. Machinery	1,526,758	1,793,494	112,444	141,328	1,265,075	1,470,241
Engines and turbines, diesel, general-purpose	28,644	23,892	7,173	6,264	20,427	17,090
Engines and turbines, general-purpose, *n.e.s.*	47,700	46,104	6,851	7,513	35,801	32,623
Electric generators and motors	49,124	67,606	11,187	17,030	32,792	43,034
Bearings	54,414	65,525	4,569	4,600	40,442	49,831
Other mechanical power transmission equipment	45,698	54,556	3,367	4,789	41,546	48,696
Compressors, blowers and vacuum pumps	35,967	44,669	4,861	5,112	29,090	36,598
Pumps, except oil well pumps	24,599	28,481	2,052	1,511	21,100	25,104
Packaging machinery	27,581	32,357	1,314	1,372	24,703	28,093
Other general purpose industrial machinery	71,289	76,710	2,958	6,721	64,299	64,396
Cranes, derricks and hoists	39,607	59,757	1,276	1,169	34,926	53,438
Industrial lift trucks, powered	23,759	34,546	3,233	4,569	19,004	29,089
Other materials handling machinery, equipment	33,554	43,766	3,364	3,167	26,338	35,711
Drilling machinery and drill bits	59,141	70,283	1,057	905	55,207	65,893
Power shovels	25,777	42,110	534	1,590	23,738	36,649
Bulldozing and similar equipment	26,457	37,415	510	348	24,395	33,403
Front end loaders	47,595	67,290	650	539	45,803	64,195
Other excavating machinery	26,688	28,318	126	510	25,900	27,266
Mining, oil and gas machinery	46,083	55,770	3,307	5,984	38,563	44,620
Construction and maintenance machinery	41,475	51,453	1,223	1,418	37,188	46,595
Machine tools, metalworking	82,008	110,637	8,657	11,705	53,777	75,683
Welding apparatus and equipment	12,700	15,876	193	576	12,215	14,648
Rolling mill machinery	14,858	12,614	3,302	3,242	9,379	8,236
Other metalworking machinery	53,215	58,252	5,697	6,245	41,999	44,142
Pulp and paper industries machinery	34,895	41,111	1,534	5,834	25,673	26,851
Printing presses	23,079	25,267	1,834	1,017	16,895	18,258
Other printing machinery and equipment	20,885	26,982	872	1,298	18,793	24,271
Spinning, weaving and knitting machinery	26,734	31,331	1,936	4,068	14,767	16,799
Other textile industries machinery	24,192	30,863	2,308	2,736	17,097	22,122
Food, beverages and tobacco machinery	26,519	32,737	2,846	3,834	19,877	23,473
Plastics and chemical industry machinery	46,036	45,721	2,117	1,248	36,128	37,462
Other special industry machinery	53,295	80,372	2,408	2,486	44,665	63,985
Soil preparation, seeding, fertilizing machinery	36,482	29,344	770	527	34,481	27,157
Combine reaper-threshers	34,263	38,400	77	1,280	28,678	34,900
Other haying and harvesting machinery	36,062	34,734	244	270	34,508	33,035
Other agricultural machinery and equipment	49,725	54,243	472	809	47,435	51,497
Wheel tractors, new	100,417	77,845	12,105	10,365	79,911	62,326
Track-laying tractors and used tractors	20,670	23,002	95	624	20,351	22,305
Tractor engines and tractor parts	75,573	93,554	5,365	8,054	67,185	80,768
3. Transportation and Communication Equipment	3,900,822	4,608,774	139,922	151,455	3,487,213	4,076,514
Railway and street railway rolling-stock	21,651	30,733	1,245	1,586	19,797	27,974
Convertible automobiles, soft top, new	58,850	53,192	4,974	6,215	49,901	39,657

9.—Imports into Canada from All Countries, from the United Kingdom and from the United States, by Section and Commodity, 1968 and 1969—continued

Section and Commodity	All Countries		United Kingdom		United States	
	1968	1969	1968	1969	1968	1969
	$'000	$'000	$'000	$'000	$'000	$'000
End Products, Inedible—concluded						
B. Transportation and Communication Equipment—concluded						
Sedans, new	940,986	989,820	47,611	64,417	800,770	796,698
Other passenger automobiles and chassis	64,443	66,066	6,064	4,733	46,029	43,122
Trucks, truck tractors and chassis	167,501	247,955	80	164	163,023	238,401
Other motor vehicles	72,465	83,485	5,988	6,261	58,232	67,580
Motor vehicle engines	244,462	313,491	573	1,326	222,307	273,890
Motor vehicle engine parts	109,849	127,078	1,522	1,387	105,434	121,436
Motor vehicle parts, except engines	1,342,300	1,764,793	7,251	10,452	1,324,885	1,740,970
Marine engines and parts	38,462	43,736	3,364	2,671	29,975	37,680
Ships, boats and parts, except engines	36,584	25,727	15,364	3,578	13,706	15,433
Aircraft, complete with engines	233,704	202,649	2,886	10,418	226,537	191,610
Aircraft engines and parts	87,386	85,850	15,104	12,033	71,886	72,832
Aircraft parts, except engines	115,944	112,282	5,428	3,993	107,911	102,240
Other transportation equipment	52,974	68,406	2,880	3,890	34,773	43,406
Telephone and telegraph equipment	32,128	36,639	4,270	2,579	21,699	27,310
Television and radio sets and phonographs	68,168	92,343	353	432	31,709	44,723
Electronic tubes and semi-conductors	46,943	62,596	2,544	4,132	38,282	50,471
Other telecommunication and related equipment	166,023	201,933	12,422	11,187	120,358	141,082
C. Other Equipment and Tools	1,050,105	1,274,897	55,437	67,758	873,855	1,059,035
Air conditioning and refrigeration equipment	87,534	81,124	3,284	3,408	79,007	70,154
Electric lighting fixtures and portable lamps	42,534	52,306	878	976	35,943	42,909
Switchgear and protective equipment	16,039	19,104	1,209	1,843	10,355	10,910
Industrial control equipment	31,025	36,754	1,198	1,693	27,418	32,691
Other electric lighting, distribution equipment	46,908	65,446	4,005	7,087	34,121	44,774
Auxiliary electric equipment for engines	54,798	70,212	682	2,615	52,941	65,248
Electrical properties measuring instruments	32,555	36,181	3,316	3,779	27,124	29,297
Miscellaneous measuring, controlling instruments	43,729	50,249	1,457	1,794	40,451	46,031
Medical and related equipment	45,915	52,505	1,344	1,578	40,299	44,996
Navigation equipment	17,818	28,747	685	1,123	16,860	27,315
Other measuring, laboratory equipment, etc.	127,440	153,680	5,380	6,702	103,147	125,207
Safety and sanitation equipment	23,370	30,207	922	950	21,926	28,490
Service industry equipment	34,925	37,098	921	735	32,495	34,670
Furniture and fixtures	36,749	40,394	1,325	1,513	24,198	28,367
Hand tools and cutlery	65,016	76,721	7,141	7,714	46,364	55,438
Electronic computers	108,606	160,527	3,690	4,143	98,497	151,155
Other office machines and equipment	91,447	107,233	10,151	8,279	57,863	72,241
Miscellaneous equipment and tools	143,697	176,411	7,848	11,828	124,845	149,140
D. Personal and Household Goods	477,195	552,116	64,815	78,647	133,977	146,563
Outerwear, except knitted	69,681	78,302	3,421	3,943	10,362	13,612
Outerwear, knitted	45,111	51,843	5,227	5,662	2,382	2,814
Other apparel and apparel accessories	42,473	52,513	5,273	8,564	9,569	10,011
Footwear	53,907	65,063	6,800	8,429	3,268	3,043
Watches, clocks, jewellery and silverware	33,722	39,129	6,117	7,038	9,387	10,556
Sporting and recreation equipment	27,874	34,558	2,198	2,728	13,479	15,871
Games, toys and children's vehicles	31,283	36,091	4,470	5,073	11,363	13,025
House furnishings	51,103	56,861	8,173	10,073	19,393	20,694
Kitchen utensils, cutlery and tableware	56,017	63,453	16,755	19,291	20,334	20,175
Other personal and household goods	66,024	74,302	6,382	7,847	34,439	36,762
E. Miscellaneous End Products	664,672	757,584	49,203	62,420	484,100	554,588
Medicinal and pharmaceutical products	53,092	66,898	7,787	9,605	31,081	38,280
Medical, ophthalmic, orthopaedic supplies	28,289	33,284	888	895	22,045	25,673
Newspapers, magazines and periodicals	58,267	64,424	823	1,300	52,886	57,328
Books and pamphlets	105,392	122,344	7,543	8,378	82,992	99,125
Other printed matter	41,031	47,167	1,860	1,812	33,975	41,426
Stationers' and office supplies	32,850	38,012	3,331	3,994	24,314	28,023
Unexposed photographic film and plates	39,982	46,954	11,379	13,833	23,597	25,943
Other photographic goods	93,329	108,709	1,485	2,258	74,792	85,627
Containers and closures	60,375	68,632	1,700	1,860	54,634	62,407
Other end products, inedible	152,066	161,161	12,407	18,484	83,783	90,756

).—Imports into Canada from All Countries, from the United Kingdom and from the United States, by Section and Commodity, 1968 and 1969—concluded

Section and Commodity	All Countries		United Kingdom		United States	
	1968	1969	1968	1969	1968	1969
	$'000	$'000	$'000	$'000	$'000	$'000
cial Transactions—Trade	**258,911**	**191,991**	**16,055**	**13,226**	**219,206**	**147,674**
ipments valued at less than $200 each	167,649	98,379	5,937	7,667	147,611	74,009
ther special transactions—trade	91,262	93,612	10,118	5,559	71,595	73,665
Totals, Imports	**12,357,982**	**14,201,632**	**696,085**	**790,973**	**9,048,372**	**10,312,638**

Section 5.—Trade by Section and by Stage of Fabrication

Tables **10** and **11** present historical series of Canada's external trade for the period 50-69 by section and by stage of fabrication with a view to throwing light on the changes in anatomy of Canada's international trade. The estimates for the years prior to 1958 subject to some limitations because of the introduction of the revised commodity trade ssifications in the early 1960s.

Methodology.—To allocate exports and imports into the statistical framework based stage of fabrication, viz., crude materials, fabricated materials and end products, requires econdary classification of the commodities in certain sections of the Standard Commodity ssification (SCC). Live Animals (Section I), being a natural product, are considered crude materials. Section II (Food, Feed, Beverages and Tobacco) is distributed as ows: crude materials include natural products not processed beyond cleaning or prepara- n for shipment, such as fresh fruits and vegetables, raw sugar, etc.; fabricated materials lude commercial feed stocks and commodities which are further processed rather than d for direct consumption; end products comprise prepared pet feeds and commodities ich require no further processing but are used directly for consumption, such as cheese, ned foods, whisky, cigars and cigarettes. Sections III, IV and V are as they are defined the SCC. Thus, Section V (Inedible End Products) consists of articles rather than terials, that is to say, finished commodities which have attained their final degree of ocessing together with specific parts and accessories of machinery which are classified h the machinery. Section VI (Special Trade Transactions), which contains compara- ely few classes, has been distributed on the basis of special studies.

Exports.—Canada's exports followed a generally upward trend during the two decades m 1950, with a steady increase from 1954. The value of domestic exports advanced re than 4½ times up to the end of 1969 to $14,442,000,000, with the major sections show- varying rates of change. This growth was reflected in all sections except Live Animals ere exports in 1969 were only about two thirds of the value in 1950. Exports of Food, ed, Beverages and Tobacco increased some 73 p.c. to $1,410,000,000. Inedible Crude aterials were up roughly 7½ times to $2,463,000,000 and Inedible Fabricated Materials re than tripled to $5,163,000,000. Inedible End Products, where the growth rate was st pronounced, were 20 times higher at $5,316,000,000. In 1969, domestic exports were .c. above those in 1968. Inedible Fabricated Materials rose 6 p.c. and Inedible End oducts continued their uptrend by rising 24 p.c.; the remaining sections recorded year- r-year declines.

Analysis by stage of fabrication shows that 1969 exports of crude materials at $3,330,- 0,000 were 3½ times those of 1950. Over the same period exports of fabricated materials bled to $5,345,000,000, and end products were up 13 times to $5,766,000,000. Whereas orts of crude materials in 1969 were 6 p.c. below the peak level of $3,540,000,000 in the vious year, those of fabricated materials and end products showed increases of 6 p.c. d 23 p.c., respectively.

10.—Domestic Exports by Section and Stage of Fabrication, 1950-69

Year	Sect. I	Sect. II				Sect. III	Sect. IV	Sect. V
		Food, Feed, Beverages and Tobacco						
	Live Animals	Crude Materials	Fabricated Materials	End Products	Total	Crude Materials, Inedible	Fabricated Materials, Inedible	End Products Inedible
	All Countries							
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
1950	84,592	510,900	134,700	169,703	815,302	332,917	1,594,641	264,926
1952	5,974	989,900	181,091	147,820	1,318,812	467,143	2,033,701	439,048
1954	19,407	630,031	149,058	183,582	962,672	502,040	2,030,945	331,972
1956	13,401	750,432	152,507	180,528	1,083,467	872,167	2,441,679	325,609
1957	53,999	603,474	141,317	166,661	911,453	1,025,398	2,406,062	369,271
1958	101,534	699,896	140,904	191,450	1,032,250	963,137	2,246,818	434,500
1959	55,790	660,221	159,886	199,584	1,019,691	1,086,994	2,461,089	386,658
1960	41,038	614,277	141,402	191,283	946,962	1,114,543	2,729,389	409,683
1961	66,901	865,451	138,688	193,664	1,197,803	1,195,442	2,777,345	505,591
1962	68,054	808,022	151,225	212,888	1,172,135	1,361,595	2,907,126	654,763
1963	41,971	1,012,475	157,532	249,850	1,419,857	1,425,951	3,106,898	779,138
1964	34,514	1,298,519	210,942	296,426	1,805,886	1,616,145	3,502,496	1,109,006
1965	79,133	1,142,518	194,010	293,290	1,629,818	1,763,701	3,728,769	1,300,145
1966	78,002	1,362,808	204,236	321,247	1,888,293	1,947,625	4,012,068	2,119,324
1967	42,313	1,068,703	187,059	346,533	1,602,295	2,108,298	4,229,365	3,115,933
1968	59,365	1,002,886	171,383	379,488	1,553,757	2,467,578	4,855,098	4,277,490
1969	54,404	803,233	180,459	426,115	1,409,807	2,463,323	5,162,695	5,316,078
	United Kingdom							
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
1950	7	185,672	43,858	45,189	274,719	47,211	140,023	5,850
1952	12	241,238	39,428	2,327	282,993	95,694	356,227	9,424
1954	18	184,747	36,323	14,045	235,115	86,914	324,446	4,476
1956	22	232,322	46,878	13,734	292,934	130,636	380,952	6,558
1957	35	169,330	40,515	10,499	220,344	138,124	354,896	7,417
1958	275	218,328	33,790	29,672	281,790	139,653	330,172	19,611
1959	255	209,622	45,016	32,788	287,425	152,578	326,776	18,656
1960	210	195,553	42,975	19,718	258,246	178,936	460,357	17,338
1961	184	179,656	39,273	19,312	238,240	204,539	440,073	26,069
1962	105	191,434	51,235	27,612	270,282	172,050	435,774	30,624
1963	46	213,133	52,432	32,198	297,762	216,316	457,459	34,555
1964	42	207,202	54,186	50,334	311,721	236,357	602,570	48,586
1965	79	207,336	60,108	34,861	302,305	256,260	567,484	47,693
1966	37	195,683	53,446	37,543	286,672	231,552	547,701	56,058
1967	56	199,682	45,514	48,114	293,310	246,431	570,604	58,309
1968	379	180,856	39,102	51,041	270,999	276,006	591,268	70,512
1969	59	177,170	38,409	43,035	258,614	236,732	531,073	69,512
	United States							
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
1950	83,888	185,424	26,034	75,437	286,896	222,462	1,311,568	105,726
1952	5,554	246,428	46,125	99,481	392,034	277,607	1,426,767	187,297
1954	18,510	176,121	29,482	120,485	326,087	296,559	1,471,992	184,101
1956	11,020	154,550	31,843	125,437	311,829	556,047	1,755,733	151,984
1957	52,696	155,763	33,425	117,007	306,195	655,206	1,660,071	156,894
1958	99,919	161,693	31,935	124,204	317,832	652,435	1,554,720	178,454
1959	54,500	129,419	32,957	127,901	290,277	730,629	1,768,038	235,211
1960	39,121	125,188	32,860	129,923	287,971	676,879	1,698,231	220,700
1961	61,060	130,025	33,794	134,302	298,121	694,914	1,760,533	283,707
1962	64,422	121,930	42,366	141,485	305,780	884,041	1,968,046	375,905
1963	38,312	137,654	40,756	154,462	332,872	881,401	2,069,229	425,436
1964	30,115	144,645	49,163	168,161	361,969	978,637	2,237,248	642,975
1965	72,008	164,498	48,203	196,216	408,917	1,012,093	2,481,658	847,472
1966	68,951	154,520	51,680	223,166	429,366	1,122,691	2,760,777	1,625,975
1967	34,503	147,824	50,456	232,213	430,493	1,185,628	2,822,357	2,597,949
1968	50,674	170,996	49,793	267,949	488,738	1,372,719	3,350,775	3,628,806
1969	45,825	182,534	53,318	320,238	556,090	1,370,780	3,573,320	4,641,973

10.—Domestic Exports by Section and Stage of Fabrication, 1950-69

Sect. VI Special Transactions—Trade				Total Domestic Exports	Recapitulation Stage of Fabrication			Year
Crude Materials	Fabricated Materials	End Products	Total		Crude Materials	Fabricated Materials	End Products	
All Countries								
$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	
48	1,890	50	1,988	3,094,365	928,457	1,731,231	434,679	1950
32	4,699	33	4,763	4,269,441	1,463,049	2,219,491	586,901	1952
25	2,194	26	2,246	3,849,281	1,151,503	2,182,197	515,580	1954
32	3,742	4,730	8,504	4,745,626	1,636,832	2,597,928	510,867	1956
1,850	3,225	7,540	12,616	4,778,799	1,684,721	2,550,604	543,472	1957
1,858	3,076	8,263	13,197	4,791,436	1,766,425	2,390,798	634,213	1958
1,981	2,832	6,638	11,450	5,021,672	1,804,986	2,623,807	592,880	1959
1,937	3,471	8,552	13,960	5,255,575	1,771,795	2,874,262	609,518	1960
4,337	403	7,164	11,903	5,754,986	2,132,131	2,916,436	706,419	1961
3,991	340	10,518	14,849	6,178,523	2,241,662	3,058,691	878,169	1962
9,771	748	14,196	24,714	6,798,529	2,490,168	3,265,178	1,043,184	1963
10,090	716	15,365	26,171	8,094,219	2,959,268	3,714,154	1,420,797	1964
9,935	720	12,857	23,512	8,525,078	2,995,287	3,923,499	1,606,292	1965
10,068	735	14,514	25,316	10,070,627	3,398,503	4,217,039	2,455,085	1966
7,618	843	14,009	22,470	11,120,674	3,226,931	4,417,268	3,476,475	1967
9,745	1,449	26,478	37,672	13,250,960	3,539,574	5,027,930	4,683,456	1968
9,490	1,708	24,008	35,205	14,441,513	3,330,450	5,344,862	5,766,201	1969
United Kingdom								
$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	
—	85	—	85	467,896	232,890	183,966	51,039	1950
—	110	—	110	744,461	336,944	395,765	11,751	1952
—	63	—	63	651,033	271,679	360,832	18,521	1954
—	11	—	11	811,113	362,980	427,841	20,292	1956
28	25	29	82	720,898	307,517	395,436	17,945	1957
26	22	27	75	771,576	358,282	363,984	49,310	1958
33	44	34	111	785,802	362,488	371,836	51,478	1959
42	80	81	203	915,290	374,741	503,412	37,137	1960
97	7	135	240	909,344	384,476	479,353	45,516	1961
101	7	97	205	909,041	363,690	487,016	58,333	1962
256	17	426	699	1,006,838	429,751	509,908	67,179	1963
287	28	188	503	1,199,779	443,888	656,784	99,108	1964
284	20	183	487	1,174,309	463,959	627,612	82,737	1965
281	18	255	554	1,122,574	427,553	601,165	93,856	1966
203	13	126	342	1,169,053	446,372	616,131	106,549	1967
203	13	188	404	1,209,567	457,444	630,383	121,741	1968
176	59	256	491	1,096,480	414,137	569,541	112,803	1969
United States								
'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	
21	471	22	514	2,011,052	491,795	1,338,073	181,185	1950
11	472	12	495	2,289,753	529,600	1,473,364	286,790	1952
8	469	8	486	2,297,734	491,198	1,501,943	304,594	1954
10	649	999	1,657	2,788,270	721,627	1,788,225	278,420	1956
1,482	906	3,115	5,503	2,836,565	865,147	1,694,402	277,016	1957
1,508	922	2,278	4,708	2,808,067	915,555	1,587,577	304,936	1958
1,617	1,094	1,784	4,495	3,083,151	916,165	1,802,089	364,896	1959
1,530	1,097	6,643	9,270	2,932,171	842,718	1,732,188	357,266	1960
3,519	97	5,225	8,841	3,107,176	889,518	1,794,424	423,234	1961
3,155	277	6,812	10,243	3,608,439	1,073,548	2,010,689	524,202	1962
7,801	571	10,758	19,130	3,766,380	1,065,168	2,110,556	590,656	1963
7,935	550	11,631	20,116	4,271,059	1,161,332	2,286,961	822,767	1964
7,802	574	9,931	18,307	4,840,456	1,256,401	2,530,435	1,053,619	1965
7,966	594	11,402	19,962	6,027,722	1,354,128	2,813,051	1,860,543	1966
6,106	428	11,025	17,559	7,088,490	1,374,061	2,873,241	2,841,187	1967
8,394	571	21,849	30,814	8,922,526	1,602,783	3,401,139	3,918,604	1968
8,213	646	18,554	27,413	10,215,400	1,607,351	3,627,284	4,980,765	1969

11.—Imports by Section and Stage of Fabrication, 1950-69

Year	Sect. I	Sect. II				Sect. III	Sect. IV	Sect. V
		Food, Feed, Beverages and Tobacco						
	Live Animals	Crude Materials	Fabricated Materials	End Products	Total	Crude Materials, Inedible	Fabricated Materials, Inedible	End Products Inedible
	All Countries							
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
1950	2,307	200,920	114,570	66,513	382,003	744,771	825,408	1,146,3
1952	3,593	215,351	98,051	90,071	403,474	711,674	1,036,545	1,690,0
1954	3,800	253,481	99,736	100,289	453,507	600,823	1,012,813	1,818,9
1956	5,375	279,318	114,798	129,540	523,656	825,787	1,528,130	2,590,0
1957	5,341	271,622	136,983	147,975	556,579	830,162	1,505,796	2,501,1
1958	5,955	280,722	123,986	156,004	560,712	690,140	1,313,053	2,402,1
1959	13,175	279,835	129,516	154,512	563,863	728,238	1,392,791	2,731,3
1960	7,426	298,651	120,476	155,519	574,647	744,993	1,343,775	2,718,2
1961	7,025	327,268	129,473	164,785	621,526	763,536	1,395,779	2,879,5
1962	7,561	355,310	143,314	158,139	656,763	826,523	1,487,419	3,152,2
1963	9,673	377,592	218,595	174,291	770,477	897,296	1,570,293	3,173,4
1964	17,124	395,475	187,316	194,806	777,596	960,662	1,812,988	3,701,2
1965	10,801	404,681	148,532	205,677	758,890	1,006,274	2,114,423	4,476,2
1966	12,910	422,087	144,959	224,695	791,741	1,023,212	2,233,137	5,483,4
1967	21,895	456,910	156,373	248,313	861,596	1,062,268	2,310,208	6,549,9
1968	15,554	488,965	159,778	253,889	902,633	1,126,744	2,434,586	7,619,5
1969	18,711	552,273	189,336	302,329	1,043,938	1,054,753	2,905,374	8,986,8
	United Kingdom							
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
1950	260	1,901	4,834	15,400	22,135	40,607	143,958	191,1
1952	248	1,116	4,014	16,511	21,641	24,006	131,690	168,6
1954	286	4,780	3,632	17,081	25,493	23,518	141,962	185,8
1956	360	2,548	5,260	17,871	25,679	28,750	196,514	219,4
1957	584	3,037	5,988	19,775	28,800	28,078	197,403	246,5
1958	470	3,897	6,765	20,074	30,736	24,040	169,043	288,5
1959	455	5,630	7,590	20,259	33,479	25,640	177,662	345,2
1960	198	4,283	8,338	20,226	32,848	25,236	167,531	357,0
1961	142	4,648	8,117	20,975	33,740	28,139	160,503	388,2
1962	516	4,138	7,441	20,316	31,894	31,428	176,785	316,9
1963	474	5,327	6,667	19,600	31,595	36,401	168,881	284,8
1964	432	4,425	3,161	27,230	34,817	37,304	180,331	313,3
1965	125	8,189	3,220	28,911	40,320	36,995	189,933	342,6
1966	126	8,215	5,493	30,479	44,187	31,622	175,186	380,1
1967	133	3,910	5,358	33,604	42,872	29,979	176,538	414,1
1968	159	5,454	4,743	35,718	45,915	28,296	183,839	421,8
1969	245	6,359	4,619	38,335	49,313	27,755	198,826	501,6
	United States							
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
1950	2,020	83,983	18,224	21,895	124,102	457,172	574,219	912,23
1952	3,320	103,320	20,873	40,408	164,601	406,743	787,222	1,462,47
1954	3,485	118,581	28,343	50,393	197,317	309,877	747,534	1,544,43
1956	4,772	144,140	37,136	70,234	251,510	401,715	1,096,282	2,214,93
1957	4,422	139,380	36,087	81,133	256,600	397,193	1,095,931	2,071,61
1958	5,190	142,044	34,458	86,233	262,735	291,503	942,761	1,893,42
1959	12,300	147,892	41,304	83,876	273,072	300,646	955,179	2,103,95
1960	6,838	163,038	41,111	85,307	289,456	325,818	922,257	2,066,48
1961	6,493	187,383	45,536	87,214	320,133	335,902	943,086	2,178,16
1962	6,689	208,465	52,730	79,858	341,053	360,126	980,713	2,499,28
1963	8,888	218,332	53,972	85,653	357,958	383,907	1,036,299	2,534,05
1964	16,365	217,033	53,976	85,062	356,071	443,025	1,197,118	2,954,80
1965	10,246	223,372	60,732	90,423	374,527	490,848	1,350,165	3,578,30
1966	12,241	242,739	64,059	95,301	402,097	506,439	1,481,763	4,451,64
1967	20,765	264,843	64,498	99,394	428,735	512,292	1,494,988	5,323,63
1968	14,533	281,761	68,746	103,693	454,200	535,827	1,580,384	6,244,22
1969	17,270	313,425	74,743	120,116	508,284	420,890	1,911,580	7,306,94

11.—Imports by Section and Stage of Fabrication, 1950-69

Sect. VI Special Transactions—Trade				Total Imports	Recapitulation Stage of Fabrication			Year
Crude Materials	Fabricated Materials	End Products	Total		Crude Materials	Fabricated Materials	End Products	
All Countries								
$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	
2,198	8,617	13,528	24,343	3,125,172	950,196	948,595	1,226,382	1950
4,988	16,505	49,576	71,069	3,916,418	935,606	1,151,101	1,829,710	1952
6,397	19,776	51,313	77,486	3,967,401	864,501	1,132,325	1,970,574	1954
7,533	26,668	39,750	73,951	5,546,952	1,118,013	1,669,596	2,759,343	1956
7,704	26,467	40,106	74,277	5,473,346	1,114,829	1,669,246	2,689,272	1957
8,348	26,864	43,297	78,508	5,050,492	985,165	1,463,903	2,601,426	1958
8,196	28,862	42,444	79,501	5,508,921	1,029,444	1,551,169	2,928,308	1959
10,322	30,326	52,945	93,593	5,482,695	1,061,392	1,494,577	2,926,726	1960
11,430	31,490	58,231	101,152	5,768,578	1,109,259	1,556,742	3,102,577	1961
15,727	31,025	80,531	127,284	6,257,776	1,205,121	1,661,758	3,390,896	1962
17,301	31,195	88,525	137,021	6,558,209	1,301,862	1,820,083	3,436,265	1963
27,222	50,816	140,097	218,135	7,487,707	1,400,483	2,051,120	4,036,105	1964
33,118	62,293	171,068	266,479	8,633,148	1,454,874	2,325,248	4,853,025	1965
40,836	70,543	210,652	322,031	9,866,439	1,499,045	2,448,629	5,918,755	1966
34,909	55,457	178,900	269,266	11,075,198	1,575,982	2,522,038	6,977,180	1967
34,342	49,606	174,963	258,911	12,357,982	1,665,605	2,643,970	8,048,406	1968
26,328	32,888	132,776	191,991	14,201,632	1,652,065	3,127,598	9,421,970	1969
United Kingdom								
$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	
72	2,055	544	2,671	400,793	42,840	150,847	207,106	1950
106	2,723	2,467	5,296	351,576	25,476	138,427	187,672	1952
254	2,845	1,973	5,073	382,229	28,838	148,439	204,952	1954
203	4,359	1,085	5,647	476,371	31,861	206,133	238,377	1956
219	4,519	1,142	5,879	507,319	31,918	207,910	267,491	1957
247	4,146	1,279	5,673	518,505	28,654	179,954	309,896	1958
267	4,448	1,362	6,077	588,573	31,992	189,700	366,882	1959
295	4,316	1,497	6,107	588,932	30,012	180,185	378,735	1960
489	4,506	2,470	7,464	618,221	33,418	173,126	411,678	1961
603	1,834	3,073	5,510	563,062	36,685	186,060	340,318	1962
582	1,054	2,955	4,591	526,800	42,784	176,602	307,412	1963
978	1,772	5,013	7,762	573,995	43,139	185,264	345,592	1964
1,137	2,064	5,846	9,047	619,058	46,446	195,217	377,595	1965
1,714	2,964	8,809	13,486	644,741	41,677	183,643	419,423	1966
1,210	1,980	6,188	9,378	673,050	35,232	183,876	453,941	1967
2,305	2,245	11,505	16,055	696,085	36,214	190,827	469,044	1968
1,782	2,410	9,034	13,226	790,973	36,142	205,854	548,977	1969
United States								
$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	
2,030	5,270	12,482	19,782	2,089,531	545,205	597,713	946,614	1950
4,780	11,858	46,595	63,233	2,887,593	518,163	819,953	1,549,476	1952
5,938	14,406	48,283	68,628	2,871,279	437,881	790,283	1,643,114	1954
7,133	17,444	37,608	62,185	4,031,395	557,760	1,150,862	2,322,772	1956
7,256	16,579	37,791	61,626	3,887,391	548,251	1,148,597	2,190,543	1957
7,790	16,313	40,433	64,535	3,460,147	446,527	993,532	2,020,090	1958
7,576	17,043	39,296	63,915	3,709,065	468,414	1,013,526	2,227,125	1959
9,410	18,000	48,361	75,771	3,686,625	505,104	981,368	2,200,153	1960
10,178	18,048	51,963	80,189	3,863,968	539,956	1,006,670	2,317,342	1961
14,217	24,540	72,922	111,678	4,299,539	589,496	1,057,983	2,652,061	1962
15,813	26,606	81,035	123,454	4,444,556	626,940	1,116,877	2,700,738	1963
24,764	44,549	127,593	196,905	5,164,285	701,187	1,295,643	3,167,456	1964
29,920	56,097	154,728	240,744	6,044,831	754,386	1,466,994	3,823,451	1965
35,784	60,966	184,674	281,424	7,135,611	797,203	1,606,788	4,731,623	1966
30,688	47,832	157,407	235,927	8,016,341	828,588	1,607,318	5,580,435	1967
29,072	41,766	148,369	219,206	9,048,372	861,193	1,690,896	6,496,283	1968
20,591	23,371	103,711	147,674	10,312,638	772,176	2,009,695	7,530,767	1969

Over the 1950-69 period, the importance of end products in Canada's exports gain relatively to crude and fabricated materials. The relative contribution of crude materi to domestic exports declined from 30 p.c. to 23 p.c., and that of fabricated materials fr 56 p.c. to 37 p.c. On the other hand, the share of end products increased from 14 p.c. 40 p.c. Newsprint maintained its predominant place among fabricated materials, wh commodities ranging from motor vehicles and aircraft to wearing apparel contributed the rising importance of end products.

The key importance of the United States among Canada's export destinations advanc from 65 p.c. of the annual total in 1950 to some 71 p.c. in 1969. The proportion of domes exports of crude materials and fabricated materials going to that country declined fr 53 p.c. and 77 p.c. to 48 p.c. and 68 p.c., respectively, whereas that of end products rose fr approximately 42 p.c. to 86 p.c. The United Kingdom's share of Canadian domes exports declined from 15 p.c. to less than 8 p.c. in the same comparison but the represent tion of end products in the exports was only fractionally lower in the later year.

Imports.—Imports also advanced more than 4½ times in the 1950-69 period to rea $14,202,000,000. Between 1960 and 1969, however, imports rose 159 p.c. against an i crease of 175 p.c. in exports. Thus, while expanding imports reflected the increasing pr perity of Canadians during the 1960s, the rise in exports was more vigorous. During t whole period, imports of Food, Feed, Beverages and Tobacco nearly tripled to $1,044,000,0 Inedible Crude Materials rose 42 p.c. to $1,055,000,000, and Inedible Fabricated Materi increased 3½ times to $2,905,000,000. About an eightfold rise was recorded in imports each of the following: Live Animals to $19,000,000, Inedible End Products to $8,987,000,0 and Special Trade Transactions to $192,000,000 in 1969. The proportion of total impo represented by Inedible End Products rose from 37 p.c. to 63 p.c., the corresponding duction being borne by other sections. Food, Feed, Beverages and Tobacco and Inedi Crude Materials, each of which accounted for about 7 p.c. of total imports in 1969, h represented 12 p.c. and 24 p.c., respectively, in 1950. Proportionally, Inedible Fabricat Materials narrowed from 26 p.c. to 20 p.c.

From the viewpoint of the stage of fabrication, imports of crude and fabricated m terials accounted for a steadily decreasing proportion of total imports, dropping from p.c. each in 1950 to 12 p.c. and 22 p.c., respectively, in 1969. On the other hand, impo of end products raised their relative importance from 39 p.c. to 66 p.c. Thus, t thirds of Canadian imports are currently end products, and prominent among these a heavy machinery, equipment and tools, required in the construction, development a operation of Canadian industries, together with automotive products.

From an already commanding position of 67 p.c. in 1950, the share of Canada's to imports from the United States rose to about 73 p.c. in 1969. The proportion of cru materials imported from that country declined from 57 p.c. to some 47 p.c., whereas share of fabricated materials and end products rose slightly from 63 p.c. to 64 p.c. and fr 77 p.c. to 80 p.c., respectively. The share of the United Kingdom in Canadian impo fell from 13 p.c. in 1950 to less than 6 p.c. in 1969, all stages of fabrication contributing the decline. Canada has recently been importing rapidly rising quantities of fabricat materials and end products from the European Economic Community and some Paci Rim countries, notably Japan.

Conclusion.—It is apparent that the Canadian economy has been in a rapid proc of diversification and that primary products are becoming progressively less important Canada's foreign trade. End products, in contrast, have expanded their proportion both exports and imports, due in particular in recent years to the increased two-way fl of automotive products arising from the Canada–United States Automotive Agreement 1965. Canada has obviously attained a high degree of sophistication in its industri development and the home market, too, has grown sufficiently to support a fairly bro spectrum of industrial activity.

PART III.—THE GOVERNMENT AND FOREIGN TRADE

Section 1.—Federal Foreign Trade Services*

Canada's economy continues to be vitally dependent on external trade. Trade brings rosperity, and with it the key to developing and expanding social programs, upgrading ducational, medical and cultural standards, and narrowing regional disparities. But export rowth is not easy to achieve. Competition among industrial nations is intense and will ecome more so. Although there is no panacea for this problem, a successful export trade an be assured by combining good products, efficient production, and aggressive, intelligent arketing with government support.

Federal Government support is provided through the Department of Industry, Trade nd Commerce and the Export Development Corporation. The Department assists Cana- ian industry throughout the complete cycle—from research and development through roduction to marketing of the finished product. The Export Development Corporation, Crown agency which reports to Parliament through the Minister of Industry, Trade nd Commerce, provides insurance, guarantees, loans and other financial facilities to help anadian exporters.

Industry, Trade and Commerce Units Involved in Export.—These units are: the eneral Relations and Area Relations Offices, the Industry, Trade and Traffic Services, airs and Missions, International Defence Programs Branches, and the Trade Commissioner ervice. The Publicity Branch and the Office of the Industrial Policy Adviser have both nternational and domestic responsibilities. The Department's nine line branches, divided nto Commodity Sectors, are concerned with promoting growth and efficiency in Canadian anufacturing (see Chap. XVI, Sect. 4), in addition to being active in trade development.

The *Office of General Relations* includes a General Trade Policy, a Commodity Trade olicy and an International Financing Division. The Office is responsible for advance lanning of Canada's external trade policies and general trade policy affecting both primary nd secondary manufacturing. It is also responsible for the planning, negotiation and dministration of intergovernmental commodity agreements requiring close contact with epresentatives of Canadian producers, importers and industry associations. The Office articipates in the development of policies and procedures for external aid, export credits nd other export financing arrangements. It keeps Canadian exporters informed about the ange of financing facilities provided by the Canadian Government and those available hrough international organizations.

The *Office of Area Relations* protects and improves the access of Canadian goods to xport markets. It participates in the development and conduct of Canada's external rade relations, and in the formulation of Canadian trade policy. It assures that Canada's rading relationships with individual foreign countries and trading blocs are taken into ccount when domestic economic programs are being worked out. It is concerned with ariffs and other government activities which affect international trade. As a service to anadian exporters, it supplies details on rates of duty, import restrictions, documentation equirements, and other foreign government measures affecting Canadian exports. In ddition, Canadian businessmen may obtain from this Office information on economic and rading conditions in all parts of the world as well as assistance in planning visits to such arkets.

The *Industry, Trade and Traffic Services Branch* consists of four Divisions: Industrial raffic Services, Export and Import Permits, Market Analysis (Import) and Industrial nd Trade Inquiries. The Industrial Traffic Services Division conducts a continuing tudy of shipping problems which affect trade, unitized cargo concepts, air and ocean freight ates and services, and air cargo utilization by geographic areas. The main purpose of the tudies is to find reliable transportation at competitive rates for external trade. Another

*Prepared in the Canadian Division of the Publicity Branch, Department of Industry, Trade and Commerce, ttawa.

objective is to help exporters select the most advantageous routes for moving their goods. The Division participates in international forums dealing with the movement of goods by sea.

The Export and Import Permits Division administers trade controls under the authority of the federal Export and Import Permits Act. The intention of the Act is to ensure, by export control, an adequate supply and distribution in Canada of goods necessary for defence or other needs. The Act also prevents any commodity sale that might be detrimental to the security of Canada. Other functions of this Division are to advise exporters on interpretation and requirements of the Export Control List and Regulations, to study the economic implications of the Export and Import Permits Act and to review control lists and practices.

The Industrial and Trade Inquiries Division provides foreign-based Canadian officers and trade development officers in Canada with appropriate information about Canadian products and companies. It maintains a multi-purpose data bank of Canadian companies and their export products. The Division provides guidance in matters not related to a particular commodity, such as the licensing of manufactures abroad, and assists businessmen unfamiliar with the operations of government by directing them to the appropriate department or agency.

The *Fairs and Missions Branch* co-ordinates all departmental activities designed to promote the sale of Canadian products and services abroad. This is done through participation in international trade fairs and in-store promotions, arranging trade missions to and from Canada and organizing visits to this country by individual buyers. Canadian products are displayed in both the Eastern and Western Hemispheres, and at recent trade fairs they have ranged from electronics equipment to cattle, from mining equipment to processed foods and from hospital equipment to electrical supplies. The Department of Industry, Trade and Commerce provides promotional publicity and first-class exhibits. It pays shipping costs for display items from Ottawa to the site of the fair. Incoming and outgoing trade missions are designed to overcome such problems as distance, language and unfamiliar market practices. Although immediate sales are the goal of most missions, future sales and foreign sales outlets are also important objectives. Some missions are of a fact-finding nature, examining new techniques or new products that could be made in Canada.

The *International Defence Programs Branch* promotes defence export trade through marketing programs aimed at the sale of Canadian defence equipment to friendly countries and the establishment of arrangements with Canada's allies for co-operative defence industrial research, development and production. A major activity is the Canada–United States defence-development and production-sharing program, which entails the joint development and reciprocal procurement of defence items. To ensure maximum Canadian industrial participation in United States defence programs, the Branch has offices in major American cities. Through specialists at Canadian missions abroad—including missions in London, Paris, Bonn and Rome and the Canadian Delegation to NATO—the Branch obtains access for Canadian defence products and technology to foreign markets.

The *Trade Commissioner Service* has 76 trade offices in 55 countries.* It promotes Canada's export trade and protects commercial interests abroad; acts as an export market consultant; secures market and credit information; brings foreign buyers in contact with Canadian sellers; recommends suitable agents; and supplies up-to-date information on export opportunities, terms of payment, tariffs, and import and exchange controls. It also maintains direct contact with individual companies and processes inquiries from Canadian businessmen.

If a Canadian firm is considering a market abroad for the first time, the trade commissioner can supply information on: (*a*) whether a particular commodity, or one similar to it, is in use in the area; (*b*) who uses it and for what purpose; (*c*) whether the country's

* Listed at intervals in the official publications *Foreign Trade* and *Commerce extérieur* of the Department of Industry, Trade and Commerce.

uirements are met by local production, by imports or by both; and (*d*) the probable son why a commodity is not in use, the possibilities of developing a market for it, and v this might be done.

The scheduled return of trade commissioners for official tours of Canada is an effective ans of imparting information to Canadian firms interested in export trade. Trade as- iations are informed well in advance of these visits so that appointments can be arranged. ring his tour, the trade commissioner can discuss export problems with firms interested exporting to his territory. Businessmen wishing to interview any trade commissioner tour may arrange to do so by communicating with the Trade Commissioner Service, Canadian Manufacturers' Association, the local Chamber of Commerce or Board of ade, or one of the Department's regional offices.

The *Publicity Branch* supports foreign trade promotion programs by creating foreign nsumer acceptance of, and demand for, Canadian products. The program of the In- national Division is geared to attract buyers to Canadian exhibits at trade fairs. Trade olicity officers, each a trade promotion specialist responsible for publicizing a group of mmodities, co-ordinate a sales-oriented promotion program on behalf of Canadian manu- turers. Their techniques include providing stories and pictures to foreign news media resentatives, placing advertising in foreign publications and sending promotion material, h as booklets and brochures, to trade commissioners for distribution to businessmen in ir territory. In addition, a public relations firm is employed in Paris.

Another service is *Canada Courier*, a tabloid-size periodical which features articles and tures about Canadian goods and services. It is published in six languages, with a cir- ation of approximately 225,000, mailed to potential buyers throughout the world. o other publications, *Foreign Trade* and *Commerce extérieur* feature articles about ort opportunities, changing conditions in foreign markets and how to gain access to se markets. *Foreign Trade* is published every two weeks, in English, and has a cir- ation of about 5,000; an annual subscription costs $5 in Canada and $7 outside the ntry. *Commerce extérieur* is published monthly, in French; an annual subscription ts $2 in Canada and $5 abroad.

The *Office of the Industrial Policy Adviser* is involved with policies and programs that e a bearing on industrial development. These include the effective adjustment of nadian industry to changing conditions abroad as well as at home. The Office develops l maintains an up-to-date reservoir of intelligence on industrial policies in Canada and oad and participates in the work of interdepartmental and international committees ling with industrial policy matters.

The *Operational Branches* within the Department are Aerospace, Marine and Rail; riculture, Fisheries and Food Products; Apparel and Textiles; Chemicals; Electrical l Electronics; Machinery; Materials; Mechanical Transport; and Wood Products. ch line branch employs a group of commodity specialists who are responsible for assisting nadian manufacturers to improve the quality and quantity of their production, and for moting the sale of these products in domestic and world markets.

Each of these industry sector branches has responsibilities in the areas of export trade motion and domestic industrial development. They lend assistance to Canadian com- ies already engaged in export activities and at the same time encourage companies h export potential to enter the highly competitive arena of international trade. Their ustrial development responsibilities include conducting relative efficiency studies to termine the competitive capacity of Canadian manufacturers, and assisting companies participate in the Federal Government's various incentive programs aimed at expanding earch development and innovation activities in Canadian industry.

Office of Tourism.—The Office of Tourism comprises the Canadian Government vel Bureau and the Travel Industry Branch. The Bureau is charged with promoting

travel to Canada from other countries; the Branch is concerned with the study and analy of the Canadian travel industry, including Federal Government activities in support tourism.

Canadian Government Travel Bureau.—To accomplish its primary function of attra ing visitors to Canada, the Bureau undertakes extensive tourist advertising and promot campaigns abroad, provides tourist publicity material for foreign newspapers, magazin radio and television and film outlets, and works closely with travel agents and tour operat on three continents. It also maintains an extensive travel counselling service, provid brochures and information to about 2,000,000 potential visitors annually. Offices operated in New York, Chicago, San Francisco, Minneapolis, Los Angeles, Boston, Phi delphia, Cincinnati, Rochester, Indianapolis, Cleveland, Detroit, Washington, Pittsbu and Seattle in the United States; the Bureau also has representation in London, Pa Frankfurt, Amsterdam, Mexico City, Tokyo and Sydney.

Travel Industry Branch.—The Branch is concerned primarily with the domestic tra industry. Its duties entail close examination of the nature and extent of tourist facilit and services in Canada and appraisal of their adequacy to meet visitor expectations; t study of federal, provincial and private programs and policies related to the growth a development of the travel industry; assessment of industry strengths, weaknesses a problems; and the preparation of advice to the Minister on ways and means to aid t industry. Close liaison is maintained with federal and provincial departments and agenc having activities related to travel and tourism and with major elements of the private sec of the Canadian travel industry.

The Branch also keeps under review the tourism and travel policies and practices other countries, studies trends and developments in international tourism, and concer itself with the activities of international organizations and agencies that affect Canad travel industry.

Export Development Corporation (EDC).—This Corporation, under authority the Export Development Act (SC 1968-69, c. 39), succeeded the 25-year-old Export Cred Insurance Corporation on Oct. 1, 1969. Its purpose is to facilitate the development Canada's export trade by providing insurance, guarantee, loan and other financial faci ties that enable Canadian firms to meet international credit competition. It reports Parliament through the Minister of Industry, Trade and Commerce. Its affairs are a ministered by a 12-man board of directors. The chairman and seven of the directors a appointed from among persons employed in the Public Service of Canada and the remaini four from private business.

EDC functions are: to insure Canadian exporters against non-payment by foreig buyers due to credit or political risks over which neither buyer nor seller has any contr to issue guarantees to persons in respect of the financing of exports; to make loans to foreig buyers or to issue guarantees in respect of the purchase of capital goods or major servic from Canada involving extended credit terms; and to insure Canadian investments abro against non-commercial risks such as war or revolution, expropriation or confiscation, the inability to repatriate capital or earnings.

Export credit insurance is available to all persons or corporations carrying on busine in Canada to cover export sales made on customary credit terms. It provides protecti against risks involved in the export, manufacture, treatment or distribution of goods, the rendering of engineering, construction, technical, or similar services. Insurance also available for a sale involving the manufacture, treatment or servicing of goods for, the leasing of goods to, a foreign customer; the sale or licensing of any rights in a paten trademark or copyright to a foreign customer; or the rendering to a foreign customer of ar managerial, construction, technological, marketing or other such service.

The main risks insured include: insolvency or protracted default on the part of t buyer; exchange restrictions in the buyer's country preventing the transfer of funds

nada; cancellation of an import or an export licence or the imposition of restrictions on the port or export of goods not previously subject to restrictions; the occurrence of war tween the buyer's country and Canada, or of war, revolution, etc., in the buyer's country ne insurance is available under the main classifications of general commodities and capital ods and services.

General commodities policies cover a policyholder's export sales to all countries for a riod of one year, and are renewable. Two types are available: the contracts policy, nich insures an exporter against loss from the time he books an order until payment is eived; and the shipments policy, obtainable at lower rates of premium and covering the porter from the time of shipment until payment is received.

Capital goods policies cover specific transactions involving such goods as plant equipent, heavy machinery, ships, aircraft, etc., where extended credit up to a maximum of e years may be necessary. Such transactions are one-time sales, and specific policies e tailored to each, but the general terms and conditions are the same as those applicable policies for general commodities. Specific policies are also issued to cover engineering, nstruction, technical or similar service contracts entered into between Canadian firms d persons in foreign countries who have agreed to purchase such services. EDC may o extend unconditional guarantees to any person who agrees to provide non-recourse ancing in respect of an insured export sale of capital equipment on medium-term credit.

EDC insures exporters on a co-insurance basis, the exporter retaining a small percentage the risk involved. The same principle operates in the distribution of recoveries obned after the payment of a claim. EDC is authorized to make loans to foreign buyers capital equipment or services from Canada for which commercial financing is not availle. In such transactions, the Canadian exporter applies for the loan on behalf of the yer. The loan must normally be $1,000,000 or more, and the credit terms required over e years. Guarantees may be given in respect of financing provided to a foreign importer Canadian capital goods and services. EDC may also guarantee and, under certain cumstances, finance a portion of local costs involved in capital projects for which it has ovided a loan or guarantee.

Foreign investment insurance may be provided with approval of the Governor in uncil. Coverage is limited to investments in developing countries; it is restricted to a ximum of 15 years and to new investments only.

Section 2.—The Development of Tariffs

Limitations of space in the Year Book have made it necessary, in regard to tariffs, adopt the policy of confining any detail regarding commodities and countries to tariff ationships in force at present and to summarize as much as possible historical data and ails of preceding tariffs.

Subsection 1.—The Canadian Tariff Structure*

The Canadian Tariff consists, in the main, of three sets of tariff rates—British Preferial, Most-Favoured-Nation, and General.

British Preferential Tariff rates are, with some exceptions, the lowest rates. They applied to imported commodities from British countries, with the exception of Hong ng, when conveyed without trans-shipment from a port of any British country enjoying benefits of the British Preferential Tariff into a port of Canada. Some Commonwealth ntries have trade agreements with Canada that provide for rates of duty, on certain cified goods, lower than the British Preferential rates.

*Information relating to rates of duty, value for duty and anti-dumping duty is available from the Department ational Revenue, Customs and Excise, which administers the Customs Act, the Customs Tariff and the Anti-ping Act.

Most-Favoured-Nation rates are usually higher than the British Preferential rates a lower than the General Tariff rates. They are applied to commodities imported fro countries with which Canada has trade agreements. These rates would apply to Britis countries when they are lower than the British Preferential Tariff rates. The most in portant trade agreement concerning the effective rates applied to goods imported fro countries entitled to Most-Favoured-Nation rates is the General Agreement on Tari and Trade (GATT).

General Tariff rates are applied to goods imported from the few countries with whi Canada has not made trade agreements.

There are numerous goods which are duty free under the British Preferential Tari or under both the British Preferential and the Most-Favoured-Nation Tariffs, or und all Tariffs.

Valuation.—In general, the Customs Act provides that the value for duty of import goods shall be the fair market value of like goods as established in the home market of t exporter at the time when and place from which the goods are shipped directly to Cana when sold "(*a*) to purchasers located at that place with whom the vendor deals at arm length and who are at the same or substantially the same trade level as the importer, a (*b*) in the same or substantially the same quantities for home consumption in the ordina course of trade under competitive conditions". In cases where like goods are not sold f home consumption but similar goods are sold, the value for duty shall be the cost of pr duction of the goods imported plus an amount for gross profit equal in percentage to th earned on the sale of similar goods in the country of export. The value for duty ordinari may not be less than the amount for which the goods were sold to the purchaser in Canad exclusive of all charges thereon after their shipment from the country of export. Intern taxes in the country of export (when not incurred on exported goods), the cost of shippi goods to Canada and similar charges do not normally form part of the value for dut There are, of course, further provisions for determining value for duty under the A

Anti-dumping Act.—Canada's Anti-dumping Act (SC 1968-69, c. 10) provides, brief, that where goods are dumped, i.e., the export price is less than the normal value, a such dumping has caused, is causing, or is likely to cause material injury to the producti of like goods in Canada, or has materially retarded or is materially retarding the establis ment of the production in Canada of like goods as determined by the Anti-dumping T bunal, there shall be levied, collected and paid an anti-dumping duty. This anti-dumpi duty is in an amount equal to the margin of dumping of the entered goods.

Drawback.—There are provisions in the Customs and Excise Tax Acts for the repa ment of a portion of the duty, sales and/or excise taxes paid on imported goods used the manufacture of products later exported. The purpose of these drawbacks (as the repayments are called) is to assist Canadian manufacturers to compete in foreign marke with foreign producers of similar goods. A second class of drawback, known as "hon consumption" drawbacks, is provided for under the Customs Act and the Customs Tar and applies to imported materials and/or parts used in the production of specified goo to be consumed in Canada.

The Tariff Board.—The organization and functions of the Tariff Board are describ at pp. 150-151 of this volume.

Subsection 2.—Tariff and Trade Arrangements with Other Countries as at June 30, 1970

Canada's tariff arrangements with other countries fall into three main categori trade agreements with a number of Commonwealth countries; the General Agreement Tariffs and Trade (GATT); and other agreements and arrangements.

The Commonwealth countries with which Canada has trade agreements providing f exchange of preferential rates are: Australia, the Bahamas, Barbados, Bermuda, Guyan

tish Honduras, Jamaica, the Leeward and the Windward Islands, Trinidad and Tobago, w Zealand, Britain and its dependent territories, and Malawi. Canada also exchanges ferences with Ceylon, Cyprus, Malaysia and Malta and accords preferences to India, kistan, Ghana, Nigeria, Kenya, Tanzania, Uganda, Zambia and Sierra Leone. Many hese countries are also members of the GATT. In addition, Canada has trade agreents with Ireland and South Africa under which preferences are exchanged.

Canada signed the Protocol of Provisional Application of the General Agreement on riffs and Trade on Oct. 30, 1947, and brought the General Agreement into force on Jan. 1948. The Agreement provides for scheduled tariff concessions and the exchange of st-favoured-nation treatment among the contracting parties, and lays down rules and ulations to govern the conduct of international trade.

At the end of June 1970, there were 77 full members in the GATT. These couns and the effective dates of their accession are indicated in the following list. In addition, nisia was a provisional member. The GATT is applied on a *de facto* basis to a number newly independent states—Algeria, Botswana, Democratic Republic of the Congo, otho, Maldive Islands, Cambodia, Mauritius, Mali, Singapore and Zambia—pending isions as to their future commercial policies.

Trade relations between Canada and a number of other countries are governed by de agreements of various kinds, by exchange of most-favoured-nation treatment under lers in Council, by continuation to newly independent states of the same treatment ginally negotiated with the countries previously responsible for their commercial relas, and by even less formal arrangements.

Tariff and Trade Arrangements with Commonwealth Countries as at June 30, 1970

Country	Agreement	Tariff Treatment
TRALIA	Trade Agreement signed Feb. 12, 1960; in force June 30, 1960. GATT effective Jan. 1, 1948.	Agreement includes schedules of tariff rates and margins and exchange of British preferential rates on items not scheduled. May be terminated on six months notice.
BADOS	Relations are based on Canada-West Indies Trade Agreement and protocol thereto (see Commonwealth Caribbean). GATT effective Nov. 30, 1966.	The parties exchange specified tariff preferences.
SWANA	GATT: *de facto* application pending Botswana's decision on commercial policy.	Canada and Botswana exchange preferential tariff treatment.
TAIN	Trade Agreement signed Feb. 23, 1937, effective Sept. 1, 1937; modified by exchanges of letters Nov. 16, 1938 and Oct. 20, 1947. GATT effective Jan. 1, 1948.	Various concessions are granted by each country including exchange of preferential tariff rates. The Agreement (as modified) includes provisions relating to the Colonies, Dependencies and Trusteeships.
LON	Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective July 29, 1948.	Canada and Ceylon exchange preferential tariff treatment.
MONWEALTH CARIBBEAN AHAMAS, BERMUDA, RITISH HONDURAS, E LEEWARD ISLANDS, D THE WINDWARD LANDS).	Canada-British West Indies Trade Agreement signed July 6, 1925, in force Apr. 30, 1927; Canadian notice of termination of Nov. 23, 1938, was replaced by notice of Dec. 27, 1939, which continued the Agreement. Protocol signed July 8, 1966 continues *ad interim* and amends Part I of the Canada-British West Indies Trade Agreement; terminates Part II of that Agreement and incorporates a number of additional provisions. Bermuda, British Honduras and the Leeward and the Windward Islands participate in GATT.	The parties exchange specified tariff preferences.

Tariff and Trade Arrangements with Commonwealth Countries as at June 30, 1970—continued

Country	Agreement	Tariff Treatment
Cyprus	GATT effective Aug. 16, 1960.	Canada and Cyprus exchange preferer tariff treatment.
Gambia	GATT effective Feb. 18, 1965.	Canada and Gambia exchange pr ential tariff treatment.
Ghana	Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective Oct. 18, 1957.	Canada accords British preferer treatment to Ghana (except on c beans). Ghana extends most-favou nation treatment to Canada.
Guyana	Relations are based on the Canada-West Indies Trade Agreement and protocol thereto (see Commonwealth Caribbean). GATT effective July 5, 1966.	The parties exchange specified t preferences.
India	Since 1897 Canada has unilaterally accorded British preferential treatment without contractual obligation. GATT effective July 8, 1948.	Canada accords British preferer treatment to India. India extends m favoured-nation treatment to Can
Jamaica	Relations are based on Canada-West Indies Trade Agreement and protocol thereto (see Commonwealth Caribbean). GATT effective Aug. 6, 1962.	The parties exchange specified t preferences.
Kenya	GATT effective Dec. 12, 1963.	Canada accords British preferential t treatment to Kenya. Kenya exte most-favoured-nation treatment Canada.
Lesotho	GATT: *de facto* application pending Lesotho's decision on commercial policy.	Canada and Lesotho exchange pr ential tariff treatment.
Malawi	Malawi and Canada observe the terms of the 1958 Trade Agreement between Canada and the former Federation of Rhodesia and Nyasaland. GATT effective July 6, 1964.	Canada and Malawi exchange preferer tariff treatment.
Malaysia	Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective Sept. 16, 1963.	Canada and Malaysia exchange pr ential tariff treatment.
Malta	Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective Sept. 16, 1964.	Canada and Malta exchange British p erential treatment.
New Zealand	Trade Agreement signed Apr. 23, 1932; in force May 24, 1932, and subsequently amended. Latest amendments incorporated in a protocol signed May 13, 1970, but not yet in force at June 30, 1970. GATT effective July 26, 1948.	The parties exchange specific preferer on scheduled goods and reciproc grant British preferential rates on it not scheduled. May be terminated six months notice.
Nigeria, Federation of	Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective Oct. 1, 1960.	Canada accords British preferential tr ment to Nigeria. Nigeria extends m favoured-nation treatment to Cana
Pakistan	Canada unilaterally accords British preferential treatment without contractual obligation. GATT effective July 30, 1948.	Canada accords British preferential tr ment to Pakistan. Exchange of most-favoured-nation tr ment.
Rhodesia	Canada does not recognize the present Government of Rhodesia.	Effective Nov. 11, 1965, Canada w drew preferential treatment from R desian goods, making them liable to general tariff rate.

Tariff and Trade Arrangements with Commonwealth Countries as at June 30, 1970—concluded

Country	Agreement	Tariff Treatment
ODESIA—concluded.....		Effective Dec. 31, 1965, Rhodesia withdrew preferential treatment from Canadian goods and required that they pay the most-favoured-nation rate.
RRA LEONE.....	Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective Apr. 27, 1961.	Exchange of most-favoured-nation treatment. Canada accords British preferential treatment to Sierra Leone. Sierra Leone extends most-favoured-nation treatment to Canada.
GAPORE.....	Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT: *de facto* application pending Singapore's decision on commercial policy.	Canada and Singapore exchange preferential treatment.
NIDAD AND TOBAGO.....	Relations are based on Canada-West Indies Trade Agreement and protocol thereto (see Commonwealth Caribbean). GATT effective Aug. 31, 1962.	The parties exchange specified tariff preferences.
NDA.....	GATT effective Oct. 9, 1962.	Canada accords British preferential tariff treatment to Uganda. Uganda extends most-favoured-nation tariff treatment to Canada.
TED REPUBLIC OF ANZANIA.	GATT effective for Tanganyika Dec. 9, 1961 and extended to Zanzibar upon formation of United Republic Apr. 23, 1964.	Canada accords British preferential tariff treatment to the United Republic of Tanzania. Tanzania extends most-favoured-nation tariff treatment to Canada.
MBIA.....	GATT: *de facto* application pending Zambian decision on commercial policy.	Canada accords British preferential treatment to Zambia. Zambia extends most-favoured-nation tariff treatment to Canada.

Tariff and Trade Arrangements with Non-Commonwealth Countries as at June 30, 1970

Country	Agreement	Tariff Treatment
ERIA.....	Franco-Canadian Trade Agreement of 1933 applied to Algeria. Algeria maintains a *de facto* application of the GATT.	Since the creation of Algeria as an independent state in 1962, Canada has continued to grant most-favoured-nation treatment.
ENTINA.....	Trade Agreement signed Oct. 2, 1941; provisionally in force Nov. 15, 1941. GATT effective Oct. 11, 1967.	Exchange of most-favoured-nation treatment.
STRIA.....	GATT effective Oct. 19, 1951.	Exchange of most-favoured-nation treatment.
GIUM–LUXEMBOURG.....	Convention of Commerce with Belgium–Luxembourg Economic Union (including Belgian colonies) entered into effect Oct. 22, 1924. GATT effective Jan. 1, 1948.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.
NELUX (BELGIUM–ETHERLANDS–LUXEMBOURG USTOMS UNION).	(See Belgium–Luxembourg and Netherlands.)	
IVIA.....	Order in Council of July 20, 1935, accepted Article 15 of U.K.–Bolivia Treaty of Commerce of Aug. 1, 1911.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.

Tariff and Trade Arrangements with Non-Commonwealth Countries as at June 30, 1970—continued

Country	Agreement	Tariff Treatment
Brazil	Trade Agreement signed Oct. 17, 1941; provisionally in force from date of signing and definitively on Apr. 16, 1943. GATT effective July 31, 1948.	Exchange of most-favoured-nation tre ment.
Bulgaria	Trade Agreement signed Oct. 8, 1963 and renewed on Oct. 8, 1966.	Exchange of most-favoured-nation tre ment.
Burma	GATT effective July 29, 1948.	Exchange of most-favoured-nation tre ment.
Burundi	GATT effective July 1, 1962.	Canada grants most-favoured-nati treatment.
Cambodia	Franco-Canadian Trade Agreement of 1933 applied to Cambodia. Although not a full member, Cambodia takes part in the work of GATT under a special arrangement.	Since the creation of Cambodia as independent state in 1955, Canada h continued to grant most-favoure nation treatment.
Cameroon	Franco-Canadian Trade Agreement of 1933 applied to Cameroon. GATT effective Nov. 28, 1960.	Exchange of most-favoured-nation tre ment.
Central African Republic	Franco-Canadian Trade Agreement of 1933 applied to Central African Republic. GATT effective Aug. 14, 1960.	Exchange of most-favoured-nation trea ment.
Chad	Franco-Canadian Trade Agreement of 1933 applied to Chad. GATT effective Aug. 11, 1960.	Exchange of most-favoured-nation trea ment.
Chile	Trade Agreement signed Sept. 10, 1941; provisionally in force Oct. 15, 1941, and definitively on Oct. 29, 1943. GATT effective Mar. 16, 1948.	Exchange of most-favoured-nation trea ment.
China	*Modus vivendi* signed Sept. 26, 1946.	Exchange of most-favoured-nation trea ment. May be terminated on thr months notice.
Colombia	Treaty of Commerce with Britain of Feb. 16, 1866, applies to Canada. Modified by protocol of Aug. 20, 1912, and exchange of notes Dec. 30, 1938.	Exchange of most-favoured-nation trea ment. May be terminated on thr months notice.
Congo (Brazzaville)	Franco-Canadian Trade Agreement of 1933 applies to Congo (Brazzaville). GATT effective Aug. 15, 1960.	Exchange of most-favoured-nation trea ment.
Congo (Leopoldville)	Belgo-Canadian Convention of Commerce of 1924 applied to Congo (Kinshasa). Maintains a *de facto* application of the GATT.	Since the Congo's independence in 196 Canada has continued to grant mos favoured-nation treatment.
Costa Rica	*Modus vivendi* signed Nov. 18, 1950; brought into force Jan. 26, 1951.	Exchange of most-favoured-nation trea ment. May be terminated on thre months notice.
Cuba	GATT effective Jan. 1, 1948.	Exchange of most-favoured-nation trea ment.
Czechoslovakia	Convention of Commerce signed Mar. 15, 1928; in force Nov. 14, 1928. GATT effective May 21, 1948.	Exchange of most-favoured-nation trea ment.
Dahomey	Franco-Canadian Trade Agreement of 1933 applied to Dahomey. GATT effective Aug. 1, 1960.	Exchange of most-favoured-nation trea ment.

Tariff and Trade Arrangements with Non-Commonwealth Countries as at June 30, 1970—continued

Country	Agreement	Tariff Treatment
NMARK (INCLUDING REENLAND).	Treaties of Peace and Commerce with Britain of Feb. 13, 1660 and July 11, 1670, apply to Canada. GATT effective May 28, 1950.	Exchange of most-favoured-nation treatment. Declaration of May 9, 1912 provides means of separate termination by Dominions on one years notice.
MINICAN REPUBLIC	Trade Agreement signed Mar. 8, 1940; in force Jan. 22, 1941. GATT effective May 19, 1950.	Exchange of most-favoured-nation treatment.
UADOR	*Modus vivendi* signed Nov. 10, 1950; in force Dec. 1, 1950.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
YPT	(See United Arab Republic.)	
SALVADOR	Exchange of notes of Nov. 2, 1937; in force Nov. 17, 1937.	Exchange of most-favoured-nation treatment. May be terminated on four months notice.
HIOPIA	Exchange of notes effective June 3, 1955.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
LAND	Exchange of notes of Nov. 13–17, 1948; effective Nov. 17, 1948. GATT effective May 25, 1950.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
NCE AND FRENCH OVERSEAS TERRITORIES.	Trade Agreement signed May 12, 1933; in force June 10, 1933. Exchange of notes of Sept. 29, 1934, and additional protocol of Feb. 26, 1935. GATT effective Jan. 1, 1948.	Exchange of most-favoured-nation treatment including scheduled concessions. May be terminated on three months notice.
BON	Franco-Canadian Trade Agreement of 1933 applied to Gabon. GATT effective Aug. 17, 1960.	Exchange of most-favoured-nation treatment.
RMANY, FEDERAL EPUBLIC OF.	GATT effective Oct. 1, 1951.	Exchange of most-favoured-nation treatment.
EECE	*Modus vivendi* by exchange of notes of July 24–28, 1947. GATT effective Mar. 1, 1950.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
EENLAND	(See Denmark.)	
ATEMALA	Trade Agreement signed Sept. 28, 1937; in force Jan. 14, 1939.	Exchange of most-favoured-nation treatment. May be terminated on six months notice.
INEA	Franco-Canadian Trade Agreement of 1933 applied to Guinea.	Since the creation of Guinea as an independent state in 1958, Canada has continued to grant most-favoured-nation treatment.
ITI	Trade Agreement signed Apr. 23, 1937; in force Jan. 10, 1939. GATT effective Jan. 1, 1950.	Exchange of most-favoured-nation treatment.
NDURAS	Exchange of notes signed July 11, 1956, effective July 18, 1956. Ratified in Honduras Sept. 5, 1956.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
NGARY	Trade Agreement signed June 11, 1964 for three-year period. Renewed Aug. 9, 1968 for a further three years from date of renewal.	Exchange of most-favoured-nation treatment and undertaking by Hungary to purchase Canadian goods to a value of $15,000,000 during the three-year validity of new Agreement.
LAND	Although there is no contractual obligation, Canada and Iceland adhere to the terms of a treaty originally concluded between Denmark and Britain on Feb. 13, 1660. GATT effective Apr. 21, 1968.	Exchange of most-favoured-nation treatment.

Tariff and Trade Arrangements with Non-Commonwealth Countries as at June 30, 1970—continued

Country	Agreement	Tariff Treatment
Indonesia	GATT effective Mar. 1, 1948.	Exchange of most-favoured-nation trea ment.
Iran	Special arrangement by Order in Council effective Feb. 1, 1951. Iran accorded most-favoured-nation treatment from Sept. 5, 1956.	Canada grants most-favoured-natio tariff rates as long as Iran accords r ciprocal treatment.
Iraq	Special arrangement by Order in Council effective Sept. 15, 1951.	Exchange of most-favoured-nation tari treatment.
Ireland	Trade Agreement signed Aug. 20, 1932; in force Jan. 2, 1933. Modified by exchange of letters on Dec. 21, 1967. GATT effective Dec. 22, 1967.	Canada grants British preferential tari in return for some bindings of tari rates, for preferential rates where suc exist and for most-favoured-natio rates on non-preferential items. Ma be terminated on six months notice.
Israel	GATT effective July 5, 1962.	Exchange of most-favoured-nation trea ment. May be terminated on thre months notice.
Italy	*Modus vivendi* by exchange of notes of Apr. 23-28, 1948; effective Apr. 28, 1948. GATT effective Jan. 1, 1950.	Exchange of most-favoured-nation treat ment. May be terminated on thre months notice.
Ivory Coast	Franco-Canadian Trade Agreement of 1933 applied to the Ivory Coast. GATT effective Aug. 7, 1960.	Exchange of most-favoured-nation treat ment.
Japan	Agreement on Commerce signed Mar. 31, 1954; effective June 7, 1954. GATT effective Sept. 10, 1955.	Exchange of most-favoured-nation treat ment. May be terminated on thre months notice.
Korea, Republic of	Trade Agreement signed Dec. 20, 1966. GATT effective Apr. 14, 1967.	Exchange of most-favoured-nation treat ment.
Kuwait	GATT effective June 18, 1961.	Since independence of Kuwait in Jun 1961, Canada has continued to accor most-favoured-nation treatment.
Laos	Franco-Canadian Trade Agreement of 1933 applied to Laos.	Since the creation of Laos as an independ ent state in 1955, Canada has continue to grant most-favoured-nation treat ment.
Lebanon	Special arrangement by Order in Council of Nov. 19, 1946.	Canada grants most-favoured-nation tariff rates as long as Lebanon accords reciprocal treatment.
Liberia	Special arrangement by Order in Council effective Mar. 1, 1955.	Canada grants most-favoured-nation treatment.
Liechtenstein	(See Switzerland.)	
Luxembourg	(See Belgium-Luxembourg.)	
Malagasy Republic	Franco-Canadian Trade Agreement of 1933 applied to Malagasy Republic. GATT effective June 25, 1960.	Exchange of most-favoured-nation treat ment.
Mali, Federation of	Franco-Canadian Trade Agreement of 1933 applied to Mali. Mali maintains a *de facto* application of the GATT.	Since the creation of Mali as an independ ent state in 1960, Canada has continued to grant most-favoured-nation treat ment.
Mauritania	Franco-Canadian Trade Agreement of 1933 applied to Mauritania. GATT effective Nov. 28, 1960.	Exchange of most-favoured-nation treat ment.
Mexico	Trade Agreement signed Feb. 8, 1946; in force provisionally same date. Ratifications exchanged on May 6, 1947; definitively in force 30 days from that date.	Exchange of most-favoured-nation treat ment. May be terminated on six months notice.

Tariff and Trade Arrangements with Non-Commonwealth Countries as at June 30, 1970—continued

Country	Agreement	Tariff Treatment
ROCCO	Various agreements relating to former French, Spanish and International Zones of Morocco.	Since the creation of Morocco as an independent state in 1956, Canada has continued to grant most-favoured-nation treatment.
HERLANDS	Convention of Commerce of July 11, 1924. Suspended during war; reinstated by exchange of notes Feb. 1 and 5, 1946. Includes Netherlands Antilles and Surinam. GATT effective Jan. 1, 1948.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.
ARAGUA	Trade Agreement signed Dec. 19, 1946; in force provisionally same date. GATT effective May 28, 1950.	Exchange of most-favoured-nation treatment.
ER	Franco-Canadian Trade Agreement of 1933 applied to Niger. GATT effective Aug. 3, 1960.	Exchange of most-favoured-nation treatment.
WAY	Convention of Commerce and Navigation with U.K. of Mar. 18, 1826, applied to Canada. GATT effective July 10, 1948.	Exchange of most-favoured-nation treatment. Convention of May 16, 1913 provides means for separate termination by Dominions on one years notice.
AMA	Order in Council of July 20, 1935 accepted Article 12 of U.K.–Panama Treaty of Commerce of Sept. 25, 1928. Treaty terminated in 1942.	While contractual obligation has expired, Canada and Panama continue to exchange most-favoured-nation treatment.
AGUAY	Exchange of notes of May 21, 1940; in force June 21, 1940.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
U	GATT effective Oct. 8, 1951.	Exchange of most-favoured-nation treatment.
LIPPINES	No agreement.	Canada and Philippines continue to exchange most-favoured-nation treatment (excluding preferences accorded by the Philippines to the United States) without contractual obligation.
AND	Convention of Commerce signed July 3, 1935, in force Aug. 15, 1936. GATT effective Oct. 18, 1967.	Exchange of most-favoured-nation treatment.
TUGAL, PORTUGUESE JACENT ISLANDS AND RTUGUESE OVERSEAS OVINCES.	Trade Agreement signed May 28, 1954 provisionally in effect July 1, 1954, definitively in force on ratification Apr. 29, 1955. GATT effective May 6, 1962.	Exchange of most-favoured-nation treatment. Remains in effect for two years from ratification and thereafter unless terminated on three months notice.
IANIA	Trade Agreement signed Mar. 22, 1968, for three-year period.	Exchange of most-favoured-nation treatment and Romanian undertaking to purchase Canadian goods to value of $9,000,000 during three-year validity of Trade Agreement.
ANDA	GATT effective Jan. 1, 1966.	Canada grants most-favoured-nation treatment.
EGAL	Franco-Canadian Trade Agreement of 1933 applied to Senegal. GATT effective June 20, 1960.	Exchange of most-favoured-nation treatment.
TH AFRICA	Trade Agreement signed Aug. 20, 1932; in force Oct. 13, 1932.	Exchange of British preferential rates on scheduled items. May be terminated on six months notice.
	Exchange of notes Aug. 2-31, 1935; effective retroactively from July 1, 1935. GATT effective June 14, 1948.	Exchange of most-favoured-nation treatment. May be terminated on six months notice.

Tariff and Trade Arrangements with Non-Commonwealth Countries as at June 30, 1970—continued

Country	Agreement	Tariff Treatment
Spain and Spanish possessions.	Since Aug. 1, 1928, Canada has adhered to U.K.–Spain Treaty of Commerce of Oct. 31, 1922.	Exchange of most-favoured-nation tr ment. May be terminated on th months notice.
	Trade Agreement signed May 26, 1954, provisionally in effect July 1, 1954, definitively in force on ratification June 30, 1955. GATT effective Aug. 29, 1963.	Supplements and amends U.K.–Sp Treaty of Commerce. Remains effect for three years from ratificati and thereafter unless terminated three months notice.
Sweden	U.K.–Sweden Convention of Commerce and Navigation of Mar. 18, 1826 applies to Canada. GATT effective May 1, 1950.	Exchange of most-favoured-nation tr ment. Declaration of Nov. 27, 1 provides means for separate terminat by the Dominions on one years not
Switzerland	U.K.–Switzerland Treaty of Friendship, Commerce and Reciprocal Establishment of Sept. 6, 1855 applies to Canada. By exchange of notes Liechtenstein included under terms of this Agreement, effective July 14, 1947. GATT effective Aug. 1, 1966.	Exchange of most-favoured-nation tr ment. Convention of Mar. 30, 1 provides means for separate termi tion by the Dominions on one ye notice.
Syrian Arab Republic	Special Arrangement by Order in Council of Nov. 19, 1946.	Canada grants most-favoured-nat tariff rates as long as Syria acco reciprocal treatment.
Thailand	*Modus vivendi* signed and brought into effect on Apr. 22, 1969.	Exchange of most-favoured-nation tre ment.
Togo	Franco-Canadian Trade Agreement of 1933 applied to Togo. GATT effective Apr. 27, 1960.	Since the creation of Togo as an indepe ent state in 1960, Canada has contin to grant most-favoured-nation tre ment.
Tunisia	Franco-Canadian Trade Agreement of 1933 applied to Tunisia. Tunisia has acceded to GATT provisionally.	Since the creation of Tunisia as an in pendent state in 1956, Canada has c tinued to grant most-favoured-nat treatment.
Turkey	Exchange of notes signed Mar. 1, 1948; in effect Mar. 15, 1948. GATT effective Oct. 17, 1951.	Exchange of most-favoured-nation tre ment. May be terminated on th months notice.
Union of Soviet Socialist Republics.	Trade Agreement signed Feb. 29, 1956, renewed for another three years Apr. 18, 1960 and again for the same period on Sept. 16, 1963 and again for the same period on June 20, 1966, and again on Mar. 1, 1969 (the extension in each case effective on the April 18 previous).	Exchange of most-favoured-nation tre ment.
United Arab Republic (Egypt).	Exchange of notes Nov. 26 and Dec. 3, 1952; in force Dec. 3, 1952. GATT effective May 10, 1970.	Exchange of most-favoured-nation tre ment. May be terminated on months notice.
United States	Trade Agreement signed Nov. 17, 1938; suspended as long as both countries continue to be contracting parties to GATT. GATT effective Jan. 1, 1948.	Most-favoured-nation treatment changed.
Upper Volta	Franco-Canadian Trade Agreement of 1933 applies to Upper Volta. GATT effective Aug. 5, 1960.	Exchange of most-favoured-nation tre ment.
Uruguay	Trade Agreement signed Aug. 12, 1936; in force May 15, 1940. Additional protocol signed Oct. 19, 1953. GATT effective Dec. 16, 1953.	Most-favoured-nation treatment.
Venezuela	*Modus vivendi* signed and brought into force Oct. 11, 1950.	Exchange of most-favoured-nation tre ment. Made for one year subject annual renewal.

Tariff and Trade Arrangements with Non-Commonwealth Countries as at June 30, 1970—concluded

Country	Agreement	Tariff Treatment
T-NAM	Franco-Canadian Trade Agreement of 1933 applied to Viet-Nam.	Since the creation of Viet-Nam as an independent state in 1955, Canada has continued to accord most-favoured-nation rates.
GOSLAVIA	Trade Agreements Act of June 11, 1928, accepted Article 30 of U.K.-Serb-Croat-Slovene Treaty of Commerce and Navigation of May 12, 1927; in force Aug. 9, 1928. GATT effective Aug. 25, 1966.	Exchange of most-favoured-nation treatment.

PART IV.—TRAVEL BETWEEN CANADA AND OTHER COUNTRIES*

International travel between Canada and other countries in 1969 involved a total of 500,000 border crossings and an estimated $2,400,000,000 in travel expenditures. Visitors m other countries to Canada numbered 36,200,000, of whom 35,800,000 were non-immi- nts entering from the United States and 463,000 were visitors from overseas countries. the same year, Canadians visiting other countries numbered 36,300,000, of whom 400,000 were residents who returned from the United States and 900,000 who returned m overseas. A high proportion of persons travelling between Canada and the United tes entered and returned on the same day.

Expenditures of Canadians travelling abroad were estimated at $1,300,000,000, of ich amount $892,600,000 was spent in the United States and $399,100,000 was spent in erseas countries. Visitors to Canada from all countries spent an estimated $1,100,000,000, which $961,300,000 was received from United States visitors and $112,600,000 from over- s visitors. Thus, the excess of Canadian expenditures over receipts resulted in a deficit $218,000,000, as compared with a deficit of $188,000,000 in 1968. The 1969 deficit was de up of a $68,800,000 surplus account with the United States and a $286,000,000 deficit h overseas countries. The larger deficit in 1969 over 1968 may be attributed in part to reased travel by Canadian residents to overseas countries but, more important, to the aller surplus earned on the United States account, as Canadian spending outstripped the rease in United States spending in Canada. Heavier Canadian expenditures abroad re affected by the increase in charter flights and special excursions abroad which enabled dents, young people and lower-income groups to travel more than in the past. It is also ely that the price inflation experienced in the major tourist centres of the world, which ied in intensity from country to country, added to the expenditures on foreign travel.

Travel Between Canada and the United States.—During 1969, some 35,765,600 ited States residents spent an estimated $961,300,000 in Canada; included in this number re 23,453,300 persons entering and leaving on the same day (excursionists and com- ters) who spent $121,100,000. The latter short-term traffic formed about 66 p.c. of the al entries but contributed only about 13 p.c. of the total expenditures. Travellers aining one or more nights, who may be referred to as tourists, numbered 12,312,300 d spent an estimated $840,200,000—34 p.c. of the volume but 87 p.c. of the expenditures.

In 1969, 12,200,000 non-resident automobiles entered Canada from the United States rying some 31,000,000 persons, an increase of 2.1 p.c. in the number of persons compared h 1968. Of the total, 10,200,000 stayed one or more nights in Canada and during their its spent $561,500,000, almost 60 p.c. of the total receipts from the United States. The

* Prepared by the Travel Statistics Section, Economic Accounts Branch, Dominion Bureau of Statistics.

number of persons travelling by aircraft and bus increased but rail and boat traffic decrea (Table 2). Persons entering by air spent an estimated $161,700,000; by bus $80,100,0 by rail $29,700,000; and by boat $12,500,000.

Travel payments to the United States (excluding Hawaii) by Canadian visitors to t country amounted to $851,600,000 in 1969. Canadian residents made 35,441,700 visits the United States, 4.4 p.c. more than in 1968. Those entering and leaving on the same d increased by 2.5 p.c. but their spending was estimated to have increased 10.4 p.c. Trav lers remaining for one or more nights in the United States numbered 9,300,000, an incre of 10 p.c., whereas their spending amounted to $795,000,000, an increase of 26 p.c. over 19

Response to a voluntary questionnaire used to secure information on travel habits Canadians travelling in the United States in 1969 (excluding motorists leaving and returni on the same day and "other travellers") indicated that 36.9 p.c. of those replying w residents of Ontario and their expenditures made up 44.9 p.c. of the total payments to t country. Quebec accounted for 35.3 p.c. of the travellers and 28.2 p.c. of their expenditu Some 58.7 p.c. stated holiday or recreation as their main reason for visiting the Uni States, 25.5 p.c. visited friends or relatives and 8.7 p.c. went for business reasons. Que reported the highest percentage of holiday trips (65.8), the Atlantic Provinces reported t highest proportion of visits to friends or relatives (35.3), and Alberta the highest proporti of business trips (13.6).

Travel Between Canada and Overseas Countries.—Overseas visitors to Cana entering both directly and by way of the United States numbered 463,200 during 1969, a estimated receipts from these visitors amounted to approximately $113,000,000, includi transportation fares paid to Canadian carriers. The expenditures of these visitors wh in Canada was estimated at $80,000,000, an increase of 44 p.c. over the preceding year; t number of visits increased 28 p.c. However, the base figures are rather small compar with the United States travel figures and the percentage increases must be viewed with t in mind. Although the number and expenditures of overseas visitors to Canada in 19 showed relatively large gains over the preceding year, they both represented declines fr the record number of visitors and expenditures that marked Centennial year. The numb of overseas visitors to Canada was almost 22 p.c. below the record 590,300 visitors in 19 and expenditures were $34,000,000 or 30 p.c. below the $114,000,000 spent in 1967; bo figures exclude transportation fares paid to Canadian carriers.

In 1969, 199,300 overseas visitors entered Canada direct and via the United Stat through the principal ports in Ontario, an increase of 50,200 over the figure for the previo year. Principal Quebec ports reported that 169,600 overseas visitors entered in 1969, increase of 31,000 over 1968. The largest absolute gains were recorded at Toronto, Mo real and Vancouver airports, which had increases of 40,100, 24,900 and 9,900, respectivel over 1968. The area of residence reported by almost one third of the overseas visitors w the United Kingdom and residents of the countries comprising the OECD in Euro accounted for another 35 p.c.; of the latter, France and Germany accounted for 42 p.c. T main province of destination for overseas visitors was Ontario which attracted 41.8 p. followed by Quebec with 28.8 p.c., British Columbia 13.1 p.c., the Prairie Provinces 6.2 p and the Atlantic Provinces 2.5 p.c. The remaining 7.6 p.c. were classified as "touring

The average length of stay of overseas visitors during 1969 was estimated at 19 nigh compared with 20 nights in 1968 and 16 nights in 1967. Visitors from the Netherlan stayed longer than those from other countries, averaging 28 nights in 1969 and 29 in 19 Visitors from the United Kingdom stayed an average of 23 nights in 1969 and 24 in 196 those from Germany stayed an average of 22 nights in 1969 and those from France 15 nigh

Canadians returning from visits to overseas countries in 1969 numbered 851,700, a their estimated net expenditure amounted to $399,000,000, including payments to overse carriers for transportation. A classification by area shows that $145,000,000 was spent the United Kingdom, $153,000,000 in other OECD countries in Europe, $52,000,000 other Commonwealth countries, and $49,000,000 elsewhere. Gross expenditures by Can

l'Ours near St. Felicien, Que.

at rushing rivers and the s sparkling lakes and across this land of Canada n incomparable aesthetic nd most Canadians live in here they may be enjoyed he pleasant summer months.

Fishing in Muncho Lake, B.C.

A swimming hole in New Brunswick's Baker Lake Provincial Park.

Malak

ans travelling overseas in 1969, including fares paid to domestic carriers, amounted to 80,000,000. The average outlay per person was $680, compared with $697 in 1968.

The response to questionnaires distributed to Canadians returning from overseas in 69 indicated that 54.0 p.c. resided in Ontario and 18.3 p.c. in Quebec. About 57 p.c. the travel overseas was for recreation or holiday, 32 p.c. for visiting friends or relatives d 10 p.c. for business. The average length of stay was estimated at 26 nights. A total 731,700 Canadians returned direct from overseas countries and 120,000 re-entered Canada way of the United States.

1.—Number and Expenditure of United States Travellers in Canada and Canadian Travellers in the United States, 1960-69

Year	U.S. Travellers in Canada	U.S. Expenditure in Canada	Canadians Travelling in U.S.	Canadian Expenditure in U.S.[1]	Excess of U.S. Travellers in Canada	Balance of Payments with the U.S.
	No.	$'000	No.	$'000	No.	$'000
0	29,654,600	375,149	29,045,800	462,324	+ 608,800	− 87,175
1	30,474,200	435,317	29,288,500	458,729	+1,185,700	− 23,412
2	31,656,400	512,407	27,944,600	419,113	+3,711,800	+ 93,294
3	31,864,800	548,871	29,389,800	387,640	+2,475,000	+161,231
4	32,463,100	590,148	32,164,100	481,092	+ 299,000	+109,056
5	33,887,300	659,843	33,433,400	548,377	+ 453,900	+111,466
6	35,325,000	729,932	34,679,900	628,150	+ 645,100	+101,782
7	39,975,600	1,164,223	32,499,900	626,538	+7,475,700	+537,685
8	34,775,800	891,234	33,948,500	710,223	+ 827,300	+181,011
9	35,765,600	961,314	35,441,700	892,562	+ 323,900	+ 68,752

[1] Includes Hawaii and transportation fares paid to United States carriers by Canadians travelling overseas via United States.

2.—Number and Expenditure of United States Travellers in Canada and Canadian Travellers in the United States, by Means of Travel and Length of Stay, 1968 and 1969

Year and Item	U.S. Travellers in Canada[1]	U.S. Expenditure in Canada	Canadians Travelling in the U.S.[1]	Canadian Expenditure in the U.S.[2]	Excess of U.S. Travellers in Canada	Excess of U.S. Expenditure in Canada
1968	No.	$'000	No.	$'000	No.	$'000
ort-Term	**23,067,900**	**120,002**	**25,469,000**	**51,289**	**−2,401,100**	**+ 68,713**
utomobile	20,595,200	99,104	22,524,000	42,099	−1,928,800	+ 57,005
ircraft	57,000	1,662	39,800	1,471	+ 17,200	+ 191
us	236,900	1,759	178,900	1,310	+ 58,000	+ 449
ail	48,000	358	600	4	+ 47,400	+ 354
oat	314,000	1,873	38,300	117	+ 275,700	+ 1,756
ther	1,816,800	15,246	2,687,400	6,288	− 870,600	+ 8,958
ng-Term	**11,707,900**	**771,232**	**8,479,500**	**632,895**	**+3,228,400**	**+138,337**
utomobile	9,735,500	500,748	6,929,600	387,018	+2,805,900	+113,730
ircraft	936,100	156,258	888,000	172,055	+ 48,100	− 15,797
us	607,000	69,259	429,800	51,233	+ 177,200	+ 18,026
ail	172,800	26,198	135,800	18,573	+ 37,000	+ 7,625
oat	256,500	18,769	96,300	4,016	+ 160,200	+ 14,753
Totals, 1968	**34,775,800**	**891,234**	**33,948,500**	**684,184**	**+ 827,300**	**+207,050**
1969						
ort-Term	**23,453,300**	**121,108**	**26,115,200**	**56,601**	**−2,661,900**	**+ 64,507**
utomobile	20,732,900	98,551	22,934,000	45,374	−2,201,100	+ 53,177
ircraft	114,500	2,265	41,500	2,627	+ 73,000	− 362
us	261,700	1,815	94,700	1,006	+ 167,000	+ 809
ail	33,300	131	100	3	+ 33,200	+ 128
oat	249,900	1,163	24,100	38	+ 225,800	+ 1,125
ther	2,061,000	17,183	3,020,800	7,553	− 959,800	+ 9,630
ng-Term	**12,312,300**	**840,206**	**9,326,500**	**795,011**	**+2,985,800**	**+ 45,195**
utomobile	10,246,200	561,559	7,349,400	450,544	+2,896,800	+111,015
ircraft	1,018,300	159,416	1,159,400	258,516	− 141,100	− 99,100
us	605,200	78,361	595,100	65,075	+ 10,100	+ 13,286
ail	164,700	29,555	114,900	16,084	+ 49,800	+ 13,471
oat	277,900	11,315	107,700	4,792	+ 170,200	+ 6,523
Totals, 1969	**35,765,600**	**961,314**	**35,441,700**	**851,612**	**+ 323,900**	**+109,702**

[1] Includes substantial amounts of in-transit, commuting, and local traffic. [2] Excludes Hawaii and transtation fares paid to United States carriers by Canadians travelling overseas via the United States.

3.—Highway Traffic at Canadian Border Points, 1968 and 1969

Year and Province or Territory	Foreign Vehicles Inward			Canadian Vehicles Returning		
	Same Day	One or More Nights in Canada	Commercial Vehicles	Same Day	One or More Nights in U.S.	Commercial Vehicles
	No.	No.	No.	No.	No.	No.
1968						
Atlantic Provinces	1,424,715	282,203	59,827	2,072,468	162,243	148,868
Quebec	787,444	605,112	103,456	1,447,051	798,837	176,279
Ontario	5,603,611	1,979,170	344,865	3,976,717	938,913	457,016
Manitoba	139,720	99,454	17,535	194,460	112,339	23,648
Saskatchewan	54,570	34,533	10,781	95,042	39,769	13,133
Alberta	43,388	68,604	12,982	63,330	45,833	7,147
British Columbia	468,222	442,949	74,534	1,285,815	360,673	43,196
Yukon Territory	4,655	28,410	2,309	1,262	2,254	575
Totals, 1968	**8,526,325**	**3,540,435**	**626,289**	**9,136,145**	**2,460,861**	**869,862**
1969						
Atlantic Provinces	1,353,855	250,336	64,560	2,005,302	163,782	132,824
Quebec	837,944	644,799	108,481	1,494,867	905,142	202,319
Ontario	5,599,252	2,053,245	336,292	4,292,929	869,351	558,281
Manitoba	153,284	110,770	18,142	194,604	118,748	25,376
Saskatchewan	51,580	37,572	10,533	89,635	41,889	33,100
Alberta	46,143	76,845	14,601	67,014	50,153	7,680
British Columbia	491,116	509,466	73,323	1,321,648	389,434	42,464
Yukon Territory	5,850	25,348	3,382	1,382	2,372	1,616
Totals, 1969	**8,539,024**	**3,708,381**	**629,314**	**9,467,381**	**2,540,871**	**1,003,660**

4.—Travel Receipts and Payments Between Canada and Overseas Areas,[1] 1967-69

(Millions of dollars)

Overseas Area	Receipts			Payments		
	1967	1968	1969	1967	1968	1969
United Kingdom	40	23	29	88	103	145
Other sterling areas	18	13	18	43	41	52
Other OECD in Europe	58	32	40	105	121	153
All other countries	38	19	26	32	33	49
Totals	**154**	**87**	**113**	**268**	**298**	**399**

[1] Excludes Hawaii.

CHAPTER XXIII.—GOVERNMENT FINANCE*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

Consolidated statistics of revenue and expenditure for all governments in Canada—deral, provincial and municipal—are presented in Section 1 of this Chapter and Section 2 vers the incidence of taxation at the three levels. More detailed information for each el of government is given in Sections 3, 5 and 6. Section 4 gives information on joint deral-provincial programs and on the extent of federal financial participation in such grams.

Section 1.—Consolidated Government Finance Statistics

Tables 1 and 2 provide details of the federal and provincial-local government com-nents of consolidated government revenue by source, and consolidated government penditure by function. The object of these consolidations is to reflect the relationship tween government and the public in respect of revenue raised and services provided. e consolidated net general figures were arrived at by eliminating from the gross revenue d the corresponding functionalized expenditure of each level of government, the follow-: conditional grants (grants-in-aid and shared-cost contributions); institutional revenue; d interest, premium, discount and exchange revenue. In addition, transfers of uncondi-nal grants such as subsidy payments of the Federal Government to provincial govern-nts have also been eliminated from the gross revenue of the receiving government and m the gross expenditure of the paying government. Because of the differing accounting actices of governments and the variations in fiscal year-ends, some discrepancies appear tween amounts recorded as intergovernment transfers received and those recorded as paid.

* Except as otherwise indicated, revised in the Governments Division, Dominion Bureau of Statistics.

1.—Consolidated Government Revenue, by Source, Fiscal Years Ended Nearest to Dec. 31, 1966 and 1967

(After elimination of intergovernment transfers)

Source	1966			1967		
	Federal	Provincial-Local	Total	Federal	Provincial-Local	Total
	$'000	$'000	$'000	$'000	$'000	$'000
Taxes—						
Income—						
Corporations	1,742,725	564,508	2,307,233	1,820,589	596,020	2,416,6
Individuals	3,050,420	1,108,562	4,158,982	3,649,674	1,461,957	5,111,6
On certain payments and credits to non-residents	203,621	—	203,621	220,472	—	220,4
On premiums of insurance companies	—	54,280	54,280	—	58,221	58,2
Other, on corporations	—	20,919	20,919	—	28,427	28,4
Real property	—	2,022,772	2,022,772	—	2,251,123	2,251,1
Personal property	—	15,167	15,167	—	9,025	9,0
Business	—	152,064	152,064	—	212,950	212,9
Special assessments (owners' share)	—	119,058	119,058	—	205,411	205,4
Poll	—	4,728	4,728	—	2,566	2,5
Sales—						
General	2,073,081	1,009,642	3,082,723	2,145,609	1,259,626	3,405,2
Motor fuel and fuel oil	—	743,603	743,603	—	792,909	792,9
Alcoholic beverages	—	735	735	—	837	
Amusements and admissions	—	45,734	45,734	—	53,427	53,4
Tobacco	—	74,646	74,646	—	75,633	75,6
Other commodities and services	—	41,492	41,492	—	63,851	63,8
Totals, Sales Taxes	2,073,081	1,915,852	3,988,933	2,145,609	2,246,283	4,391,8
Excise duties and special excise taxes	774,578	—	774,578	860,484	—	860,4
Customs import duties	777,586	—	777,586	746,437	—	746,4
Estate taxes and succession duties	101,106	117,580	218,686	102,192	109,287	211,4
Hospital insurance premiums	—	188,831	188,831	—	225,583	225,5
Other taxes	170	34,083	34,253	12,024	33,899	45,9
Totals, Taxes	**8,723,287**	**6,318,404**	**15,041,691**	**9,557,481**	**7,440,752**	**16,998,2**
Privileges, Licences and Permits—						
Liquor control and regulation	—	63,445	63,445	—	68,960	68,9
Motor vehicles	—	253,889	253,889	—	325,217	325,2
Natural resources	7,813	514,131	521,944	4,292	503,401	507,6
Other	31,206	99,200	130,406	11,515	98,794	110,3
Totals, Privileges, Licences and Permits	**39,019**	**930,665**	**969,684**	**15,807**	**996,372**	**1,012,1**
Sales and services	120,989	161,118	282,107	204,188	408,473	612,6
Fines and penalties	3,483	49,967	53,450	6,138	81,819	87,9
Interest, discount, premium and foreign exchange	350,560	208,173	558,733	423,367	217,864	641,2
Contributions from Enterprises—						
Liquor boards and commissions	—	327,061	327,061	—	363,083	363,0
Other enterprise remittances	163,670	61,317	224,987	189,723	41,339	231,0
Totals, Contributions from Enterprises	163,670	388,378	552,048	189,723	404,422	594,1
Bullion and coinage	6,861	—	6,861	17,152	—	17,1
Postal services	295,529	—	295,529	327,224	—	327,2
Other revenue	19,400	87,364	106,764	8,901	114,298	123,1
Totals, Gross Revenue from Own Sources	**9,722,798**	**8,141,069**	**17,866,867**	**10,749,981**	**9,664,000**	**20,413,9**
Federal enterprises—in lieu of taxes	—	7,349	7,349	—	8,756	8,7
Provincial enterprises—in lieu of taxes	—	16,389	16,389	—	16,836	16,8
Deduct—						
Revenue derived from expenditure functions	7,469	26,155	33,624	6,141	31,602	37,7
Interest revenue (contra debt charges)	289,922	174,926	464,848	368,178	203,529	571,7
Totals, Consolidated Government Revenue	**9,425,407**	**7,966,726**	**17,392,133**	**10,375,662**	**9,454,461**	**19,830,1**

.—Consolidated Government Expenditure, by Function, Fiscal Years Ended Nearest to Dec. 31, 1966 and 1967

(After elimination of intergovernment transfers)

Function	1966			1967		
	Federal	Provincial-Local	Total	Federal	Provincial-Local	Total
	$'000	$'000	$'000	$'000	$'000	$'000
neral government	428,471	517,674	946,145	474,674	568,617	1,043,291
otection of persons and property	188,960	652,120	841,080	219,303	752,816	972,119
ansportation and communications	668,563	1,592,258	2,260,821	657,267	1,552,995	2,210,262
nitation and waste removal	—	215,645	215,645	—	462,701	462,701
alth	510,157	1,392,826	1,902,983	617,829	1,657,994	2,275,823
cial welfare	2,095,917	544,715	2,640,632	2,580,356	664,038	3,244,394
creational and cultural services	86,625	255,387	342,012	108,825	303,611	412,436
lucation	431,058	3,049,576	3,480,634	452,627	3,748,096	4,200,723
tural resources and primary industries	543,018	358,344	901,362	682,497	357,671	1,040,168
ade and industrial development	164,657	65,496	230,153	211,957	56,725	268,682
ational capital region planning and development	37,296	—	37,296	22,879	—	22,879
cal government planning and development	—	24,631	24,631	—	25,067	25,067
efence services and mutual aid	1,663,992	—	1,663,992	1,783,965	—	1,783,965
terans' pensions and other benefits	391,958	—	391,958	401,039	—	401,039
bt charges (excluding retirement)	902,618	452,665	1,355,283	939,695	595,055	1,534,750
ntributions to enterprises	178,080	35,075	213,155	217,831	35,930	253,761
ternational co-operation and assistance	211,928	—	211,928	167,353	—	167,353
her Expenditures—						
Citizenship and immigration	22,507	—	22,507	24,420	—	24,420
External affairs	39,445	—	39,445	50,197	—	50,197
Postal services	335,735	—	335,735	374,168	—	374,168
Royal Canadian Mint	3,218	—	3,218	3,997	—	3,997
Housing research and slum clearance	12,371	36,707	49,078	15,514	26,781	42,295
Home owners' subsidies	—	56,403	56,403	—	61,914	61,914
Emergency measures	11,166	1,773	12,939	10,156	1,657	11,813
Provision for reserves	—	44,639	44,639	—	46,693	46,693
Special projects	—	3,500	3,500	—	3,907	3,907
Other	241,704	258,230	499,934	264,462	283,336	547,798
Totals, Other Expenditure	666,146	401,252	1,067,398	742,914	424,288	1,167,202
Totals, Consolidated Government Expenditure	**9,169,444**	**9,557,664**	**18,727,108**	**10,281,011**	**11,205,604**	**21,486,615**

Section 2.—Taxation in Canada*

Canada is a federal state with a central government and ten provincial governments. n 1867, the principal colonies of the British Crown in North America joined together to rm the nucleus of a new nation and the British North America Act of that year became s written constitution. This statute created a central government with certain powers hile continuing the existence of political subdivisions called provinces with powers of eir own.

Under the British North America Act, the Parliament of Canada has the right to raise money by any mode or system of taxation" while the provincial legislatures are restricted o "direct taxation within the province in order to the raising of a revenue for provincial urposes". Thus, the provinces have a right to share only in the field of direct taxation hile the Federal Government is not restricted in any way in matters of taxation. The ritish North America Act also empowers the provincial legislatures to make laws regard- g "municipal institutions in the province". This means that the municipalities derive eir incorporation with its associated powers, fiscal and otherwise, from the provincial overnment concerned. Thus, municipalities are also limited to direct taxation.

* Revised (July 1970) in the Tax Policy Division, Department of Finance, under the direction of F. R. Irwin, irector of the Division, and by the provincial authorities concerned.

A direct tax is generally recognized as one "which is demanded from the very perso who it is intended or desired should pay it". This conception has limited the provinci governments to the imposition of income tax, retail sales tax, succession duties and a assortment of other direct levies. In turn, municipalities, acting under the guidance provincial legislation, tax real estate, water consumption and places of business. Th Federal Government levies taxes on income, on gifts and on the estates of deceased person as well as excise taxes, excise and customs duties, and a sales tax.

Starting in 1941, a series of federal-provincial tax agreements were concluded t promote the orderly imposition of direct taxes. The duration of each agreement wa normally five years. Under the earlier agreements, the participating provinces undertoo in return for compensation, not to use or permit their municipalities to use certain of th direct taxes. Under the present arrangements, the federal income tax otherwise payab in all provinces and the estate tax otherwise payable in three provinces are abated by certai percentages to make room for provincial levies.

The current arrangements became operative on Apr. 1, 1962 and were originall scheduled to terminate on Mar. 31, 1967, but have been extended subject to terminatio on due notice being given. They amount to a partial federal withdrawal from the fiel of direct taxation and a re-entry of all provinces into the vacated area. The federa personal income tax otherwise payable on income earned in a province and on incom received by a resident of a province is reduced by the following percentages: 16 p.c. fo 1962 income, 17 p.c. for 1963 income, 18 p.c. for 1964 income, 21 p.c. for 1965 income 24 p.c. for 1966 income and 28 p.c. for income in 1967 and subsequent years.* The abate ments in respect of income earned in Quebec or received by a resident of Quebec are 44 p.c for 1965 income, 47 p.c. for 1966 income and 50 p.c. for income in 1967 and subsequen years. The additional points of abatement in Quebec are to allow that province to collec revenue to pay for certain programs that are paid for in whole or in part by the Federa Government in other provinces. The Federal Government also reduces its rate of corpo ration income tax on taxable income of corporations earned in the provinces. The reduc tion was 9 p.c. of taxable income earned in any province except Quebec and 10 p.c. o taxable income earned in Quebec for the years from 1962 to 1967. The additional 1-p.c reduction in respect of taxable income earned in the Province of Quebec for these yea was to compensate for the additional tax levied by the province during this period o corporation income to provide grants to universities. These provincial grants replace federal grants which in other provinces were paid to the universities by the Federal Govern ment through the Canadian Universities Foundation. Starting in 1967, with the termina tion of direct federal financial assistance to universities, the abatement of the federal rat of corporation income tax is 10 p.c. of taxable income in all provinces. The Federa Government also abates the federal estate tax otherwise payable by 75 p.c. in respect o property situated in a province that levies its own death tax.†

These reductions in federal income tax and estate tax do not apply to the Yuko Territory or the Northwest Territories or to income earned outside Canada. The Yuko and Northwest Territories do not impose income taxes or death taxes.

The provincial tax rates are not restricted to the extent of the federal withdrawa The constitutional position of the provinces permits them unlimited use of direct taxe for the raising of revenue for provincial purposes. However, in three provinces (Princ Edward Island, Nova Scotia and British Columbia), the provincial rates of income ta do not exceed the federal abatement.

* The original agreement provided for abatements of 19 p.c. for 1965 income and 20 p.c. for 1966 income. How ever, in 1964 the provinces were granted an additional two percentage points for 1965 income and four percentag points for 1966 income and in 1966 they were granted an additional four percentage points for 1967 and 1968 incom

† The original agreement was for a 50-p.c. abatement but at the conclusion of a federal-provincial conference i late 1963 it was increased to 75 p.c. in respect of deaths occurring after Mar. 31, 1964. Currently, only the estat of domiciliaries of British Columbia qualify for the full 75-p.c. abatement. Quebec and Ontario estates are ten porarily eligible for only 50 p.c. because these two provinces have elected for the time being to take a payment fro the Federal Government on account of the additional 25-p.c. abatement rather than to increase their succession dut rates.

As part of the current fiscal arrangements, the Federal Government has entered into x collection agreements under which it collects the provincial personal income taxes for provinces except Quebec and the provincial corporation income taxes for all provinces cept Ontario and Quebec.

Subsection 1.—Federal Taxes

dividual Income Tax

Personal income taxation in Canada is on the basis of residence rather than citizenship. very individual who is resident in Canada at any time during a year is liable for the yment of income tax on all his income. Every non-resident individual who is employed carries on business in Canada during a year is liable for tax on his income earned in nada. The term "residence" is difficult to define simply but, generally speaking, it taken to be the place where a person resides or where he maintains a dwelling ready at times for his use. There are also extensions of the meaning of Canadian resident to clude a person who has sojourned in Canada for an aggregate period of 183 days in a xation year, or a person who was during the year a member of the Armed Forces of Canada an ambassador, a high commissioner, or an officer or servant of Canada or of any one its provinces, or the spouse or dependent child of any such person. The extended eaning of residence also includes employees who go from Canada to work under certain ternational development assistance programs.

The Canadian tax law uses the concepts "income" and "taxable income". The income a resident of Canada for a taxation year comprises his revenues from all sources inside outside Canada and includes income for the year from all businesses, property, offices d employments. It does not include capital gains unless they arise out of the conduct a business or as a result of an adventure in the nature of trade.

In computing his income for a taxation year, an individual must include all dividends, es, annuities, pension benefits, allowances, interest, alimony, maintenance payments and her miscellaneous sources of income. On the other hand, war service disability pensions id by Canada or an ally of Her Majesty at the time of the war service, unemployment surance benefits, compensation in respect of an injury or death paid under a Workmen's mpensation Act of a province and family allowances do not have to be included in the mputation of income.

In computing his income for a taxation year, an individual who is carrying on business ay deduct business expenses including depreciation (called capital cost allowances), terest on borrowed money, reserves for doubtful debts, contributions to pension plans or ferred profit-sharing plans for his employees, bad debts, and expenses incurred for ientific research. In general, no deductions are allowed in computing income from salary d wages, although there are exceptions such as travelling expenses of employees who ve to travel as they perform their work (such as employees on trains), union dues, mony payments and contributions to registered pension plans. Individuals may deduct, thin limits, amounts set aside to provide a future income under registered retirement vings plans. Students attending universities, colleges, high schools, public schools or rtain other certified educational institutions in Canada may deduct their tuition fees if ey exceed $25 per annum. Students in full-time attendance at universities outside nada may deduct their tuition fees.

Having computed his income, the individual then calculates his taxable income by ducting certain exemptions and deductions. These exemptions and deductions are as lows: for single status, $1,000; for married status, $2,000; for dependent children under e 16, $300 per child; for other dependants (as defined in the law), $550 per dependant; here the taxpayer is 70 years of age or over, an additional $500; where the taxpayer is

blind or confined to a bed or a wheelchair, an additional $500; charitable donations, up 10 p.c. of income; and medical expenses, in excess of 3 p.c. of income. In lieu of claimi deductions for charitable donations and medical expenses, an individual may claim standard deduction of $100.

As already stated, an individual who is resident in Canada is taxed on his income fro both inside and outside Canada. An individual who is not resident in Canada at any tin during the year but who carries on business in Canada or who earns salary or wages Canada is taxed only on the income earned in Canada. In computing taxable incon earned in Canada, such a non-resident individual is allowed to deduct that part of th exemptions and deductions that may reasonably be attributed to the income earned Canada. (A non-resident who derives investment income from Canada is taxed in different way described on p. 1131.) An individual who ceases to be a resident of Canad during the year or who becomes a resident during the year so that he is resident for on part of the year will be subject to income tax in Canada on only that part of his incon for the year received while he is resident in Canada. In these circumstances, the deductio from income permitted for determining taxable income will be the amount that may re sonably be considered as applicable to the period during which he is resident in Canad

A progressive schedule of rates is applied to taxable income, beginning at 11 p.c. the first $1,000 of taxable income and increasing to 80 p.c. on taxable income in excess $400,000. In addition, an old age security tax is levied on taxable income at the rate 4 p.c. with a maximum of $240 reached at $6,000 of taxable income. Starting in 1969, a additional tax, called a social development tax at the rate of 2 p.c. of taxable income wi a maximum of $120, is imposed. For the years 1968, 1969 and 1970, there is also a temp rary surtax of 3 p.c. of the amount of basic tax in excess of $200. ("Basic tax" is person income tax, excluding the old age security tax, the social development tax and the temporar surtax and after deduction of the dividend tax credit but before the abatement for provinci income tax or the general tax reduction of 20 p.c. with a maximum of $20.)

An individual is allowed to deduct certain amounts from his tax otherwise payabl These deductions are as follows: (1) *Dividend Tax Credit*—to partially eliminate the doub taxation of corporate profits and to encourage participation in the ownership of Canadi companies, Canadian resident individuals are allowed to deduct from their income tax, b not from old age security tax or social development tax, an amount equal to 20 p.c. of th net dividends they receive from Canadian taxable corporations. (2) *Foreign Tax Credit*- foreign taxes paid on income from foreign sources may be deducted from Canadian incon tax but the deduction may not exceed the Canadian tax related to such income. (3) *Abat ment under Federal-Provincial Arrangements*—the federal basic tax otherwise payable c income of a resident of a province and on income earned in a province is reduced by 28 p. in all provinces except Quebec and by 50 p.c. in Quebec. (4) *General Tax Reduction*- all individuals may deduct from their tax an amount equal to the lesser of 20 p.c. of the basic tax or $20.

To a very large extent, individual income tax is payable as the income is earned. Ta payers in receipt of salary or wages have tax deducted from their pay by their employ and in this way pay nearly 100 p.c. of their tax liability during the calendar year. Th balance of the tax, if any, is payable at the time of filing the tax return on or before Apr. 30 the following year. Persons with more than 25 p.c. of their income from sources not subje to tax deductions must pay tax by quarterly instalments throughout the year and retur must be filed on or before Apr. 30 in the following year. Farmers and fishermen pay tw thirds of their tax on or before Dec. 31 each year and the remainder on or before Apr. 3 in the following year.

The following statement shows what taxpayers pay (1970) at various levels of income. calculating these taxes it has been assumed that all taxpayers take the standard deduction $100 and no allowance has been made for the 20-p.c. dividend tax credit.

Status	Income	Income Tax including Social Development Tax and Surtax	Old Age Security Tax
	$	$	$
Single taxpayer—no dependants	1,200	11	4
	1,500	43	16
	2,000	97	36
	2,500	174	56
	3,000	255	76
	5,000	661	156
	10,000	1,989	240
	20,000	6,094	240
	50,000	21,688	240
	100,000	52,475	240
Married taxpayer—no dependants	2,200	11	4
	2,500	43	16
	3,000	97	36
	5,000	447	116
	10,000	1,684	240
	20,000	5,630	240
	50,000	21,121	240
	100,000	51,805	240
Married taxpayer—two children under age 16	2,800	11	4
	3,000	32	12
	5,000	330	92
	10,000	1,524	240
	20,000	5,352	240
	50,000	20,782	240
	100,000	51,403	240

The income taxes shown above are the combined federal and provincial taxes in ovinces where the provincial tax is the same as the federal abatement (i.e., in Nova Scotia, rince Edward Island, Ontario and British Columbia). In Quebec, the provincial tax pproximates the amount of the federal abatement; in Newfoundland, New Brunswick, anitoba, Saskatchewan and Alberta, the provincial tax exceeds the abatement.

orporation Income Tax

The Income Tax Act levies a tax upon the income from everywhere in the world of rporations resident in Canada and upon the income attributable to operations in Canada non-resident corporations carrying on business in Canada. In computing their income, rporations may deduct operating expenses including municipal real estate taxes, reserves r doubtful debts, bad debts, and interest on borrowed money. They may not deduct ovincial income taxes other than provincial taxes on income derived from mining opera- ons. (For this purpose "income from mining operations" is specially defined.)

Regulations covering capital cost allowances (depreciation) permit taxpayers to deduct er a period of years the actual cost of all depreciable property. The yearly deductions normal capital cost allowances are computed on the diminishing balance principle. axpayers engaged in farming and fishing may choose between this and the straight-line ethod.) Published regulations establish a number of classes of property and maximum tes. There is provision for recapture of any amount deducted in excess of the ultimate t capital cost of any asset.

Accelerated depreciation (full write-off in two years) is allowed in respect of structures d equipment acquired in the period Apr. 27, 1965 to Dec. 31, 1973 to prevent water llution and in the period Mar. 13, 1970 to Dec. 31, 1973 to prevent air pollution. Accel- ated depreciation (full write-off in four years) is also allowed in respect of new buildings or her structures for storing grain on a farm and in respect of machinery designed for drying ain on a farm acquired in the period July 1, 1969 to Dec. 31, 1969. Accelerated deprecia-

tion is also allowed for the capital cost of a new manufacturing or processing facility respect of which a development grant is paid under the Area Development Incentives A To be eligible, facilities must be brought into commercial production by the end of 197 The capital cost allowances that could otherwise be claimed in respect of commercial buil ings constructed during the period June 4, 1969 to Dec. 31, 1970 are deferred. For proje commenced between Mar. 12, 1970 and the end of 1970, the deferment will apply to t construction costs incurred up to the end of 1971. The deferment applies in the taxati year in which the costs are incurred and in the next taxation year. Housing, buildin constructed for operation of public utilities or transportation services other than offi buildings, and buildings for manufacturing and for farming or fishing are excluded.

Expenditures on scientific research related to the business of the taxpayer may written off for tax purposes in the year when incurred.

Taxpayers operating mines, oil wells, gas wells and wells for extracting potash by t solution method are allowed a depletion allowance, usually computed as a percentage profits derived from mineral, oil or gas production, which continues as long as the mine well is in operation. This allowance is in addition to capital cost allowances on building machinery and similar depreciable assets used by the taxpayer and the deduction of explor tion and drilling expenses. Taxpayers operating timber limits receive an annual allowanc sometimes called a depletion allowance. This is a ratable proportion of the amount i vested in the limit and is based on the amount of timber cut in the year. When the amou invested in the limit has been recovered, no further allowance is given.

In computing taxable income, corporations may deduct dividends received from oth Canadian taxpaying corporations and also from foreign corporations in which the Canadia corporation has at least 25 p.c. stock ownership. Business losses may be carried back o year or forward five years and deducted in computing taxable income. Corporations m also deduct donations to charitable organizations up to a maximum of 10 p.c. of their incom

The general rates of tax on corporate taxable income are 18 p.c. on the first $35,000 taxable income and 47 p.c. on taxable income in excess of $35,000. Corporations deriv more than one half of their gross revenue from the sale of electric energy, gas or steam pa tax on their taxable income from such sources at the rate of 18 p.c. on the first $35,000 taxable income and 45 p.c. on taxable income in excess of $35,000.* Corporations th qualify as investment companies pay a tax of 18 p.c. on their taxable income. In additi to these rates, all corporations pay an old age security tax of 3 p.c. of taxable income, brin ing their rates up to 21 p.c. and 50 p.c. (21 p.c. and 48 p.c. for the public utility compani and 21 p.c. for investment companies).

On profits earned in 1968, 1969 and 1970, corporations must also pay a surtax of 3 p. of the amount of federal tax excluding old age security tax but before the abatement und federal-provincial fiscal arrangements referred to below. Starting in 1969, life insuran corporations have to pay a special 15-p.c. tax on a base related to their investment incom This is in addition to the normal corporation income tax.

Corporations are allowed to deduct certain amounts from their tax otherwise payabl These deductions are as follows: (1) *Foreign Tax Credit*—foreign taxes paid on income fro foreign sources may be deducted from Canadian income tax but the deduction may n exceed the Canadian tax related to such income. (2) *Abatement under Federal-Provinci Fiscal Arrangements*—corporations may deduct from their tax an abatement equal to 10 p. of their taxable income attributable to operations in each Canadian province. This abate ment is to make room for the provincial income tax levied by each province. (3) *Provinci Logging Tax*—corporations may deduct from their tax an amount equal to two thirds of provincial tax on income from logging operations not exceeding two thirds of 10 p.c. the corporation's income from logging operations in the province. (At present only Ontari Quebec and British Columbia impose logging taxes—see p. 1138.)

* 95 p.c. of the federal tax collected from these corporations is remitted to the provinces.

Income from the operation of a new mine, including income from wells for extracting tash by the solution method, is exempt from income tax during the first 36 months after ming into commercial production.

Corporations are required to pay their tax (combined income, surtax and old age secu- y tax) in monthly instalments. For taxation years starting after Nov. 30, 1969, corpora- ns have to begin their monthly tax payments in the first month of their taxation year d make their twelfth instalment by the last day of that year. Each monthly remittance ll be equal to (*a*) one twelfth of the tax as estimated by the corporation at the rates for e year on its estimated taxable income for the year or, (*b*) in each of the first two months the year an amount equal to one twelfth of the tax as estimated by it at the rates for the ar on its taxable income for the second taxation year preceding the year, and in each of e next 10 months in the year an amount equal to one tenth of the amount remaining after ducting the amount paid in the first two months from the tax as estimated by it at the es for the year on its taxable income for the immediately preceding year. Any balance tax outstanding has to be paid by the last day of the third month following the close the taxation year and the return for the year has to be filed by the last day of the sixth nth following the close of the taxation year.

xation of Non-residents

A non-resident is liable for payment of income tax if he was employed or was carrying business in Canada during a taxation year. The expression "carrying on business in nada" includes (1) maintaining a permanent establishment in Canada, (2) processing ds even partially in Canada, and (3) entering into contracts in Canada. The taxable ome of a non-resident individual derived from carrying on business in Canada or from ployment in Canada is taxed under the same schedule of rates as Canadian resident ividuals. Profits earned in Canada by a non-resident corporation carrying on business Canada are taxed at the regular rates of corporation income tax and are also subject to additional tax of 15 p.c. This additional tax is imposed on profits attributable to the nch after deducting therefrom Canadian federal and provincial income taxes and an wance in respect of the net increase in capital investment in property in Canada. (Tax aties with some countries provide certain exemptions from tax for remuneration for vices performed in Canada by residents or employees of these countries. They also hibit Canada taxing profits of a non-resident enterprise unless that enterprise has a rmanent establishment in Canada.)

Furthermore, the Income Tax Act imposes a tax at the rate of 15 p.c. on certain forms ncome paid by residents of Canada to non-resident persons. It applies to interest (other an interest on government bonds issued after Apr. 15, 1966, interest on certain bonds ued before Dec. 20, 1960 and interest paid to certain exempt lenders), dividends, rentals, alties, income from a trust or estate and alimony, and applies whether the income is paid non-resident individuals or to corporations. The rate is reduced to 10 p.c. in the case dividends paid by a company that has a degree of Canadian ownership* and is also p.c. on royalties from motion picture films. This non-resident tax is withheld at the rce by the Canadian payer. Non-residents who receive only this kind of income from nada do not file returns in Canada.

ft Tax

The Income Tax Act levies a tax upon gifts. The Budget presented on Oct. 22, 1968 nounced an increase in the rates of gift tax and a change in the exemptions with respect gifts made after that date. The rates now apply to a cumulative gift sum. A "cumula- e gift sum" is the aggregate of the taxable value of all gifts made after Oct. 22, 1968, to the end of the year for which tax is being calculated. The rates of tax range from

* Generally, a corporation is regarded as having a degree of Canadian ownership where 25 p.c. of its equity and ng shares are owned by Canadians and/or corporations controlled in Canada, or where the voting shares of the oration are listed on a Canadian stock exchange and no more than 75 p.c. of its issued outstanding voting shares owned by a non-resident alone or in combination with related persons.

12 p.c. on a cumulative gift sum of $15,000 or less to 75 p.c. where the cumulative gift su exceeds $200,000. Gifts from a husband to his wife or from a wife to her husband a exempt. In addition, gifts up to $2,000 to any number of persons are exempt.

Estate Tax

The estate of a deceased person is subject to estate tax if its value exceeds $50,00 The tax applies to property passing, or deemed to pass, at death. Property "deemed pass" includes such property as gifts made by the deceased within three years of his deat pensions or death benefits payable in respect of his death, and annuities purchased by t deceased. All the property of persons who were domiciled in Canada before their dea must be taken into consideration no matter where that property is situated; for perso dying domiciled outside of Canada only their property situated in Canada is subject to ta

In computing the tax of a Canadian domiciliary, the value of the whole estate is fi determined. Then the estate debts and certain expenses, such as funeral expenses, a deducted. The remainder is "aggregate net value".

If the aggregate net value of an estate is $50,000 or less, no tax is exacted. Th figure of $50,000 is not a deductible exemption, but simply an amount at and below whi no tax is levied. If an estate is valued at more than $50,000, it may or may not be taxab depending on the amount of the deductible exemptions, but in no case must the tax redu the value of the estate, after tax, to less than $50,000.

Where the aggregate net value of an estate is more than $50,000 there may be deduct certain amounts in respect of bequests left by the deceased to his or her surviving spouse children, or to charitable organizations in Canada. There is a complete exemption of th value of property left by the deceased in the form of an outright bequest to his survivi spouse or in the form of a settlement under which only the surviving spouse is entitle during her (or his) lifetime, to receive all of the income of the settlement, or to receive period annual payments out of the income or capital, and under which only the surviving spou may, during her (or his) lifetime, use or receive the capital. In the case where the survivi spouse is to receive periodic payments, the exemption cannot exceed the value of a capit sum that is determined by regulation to be sufficient to yield the amount of the period payment. The exemption is granted only if it is established that the surviving spouse h an indefeasible right to the bequest.

There are also exemptions for bequests to children of the deceased. A bequest to child over age 25 (if he is not infirm) is exempt to a maximum of $10,000. A bequest to child aged 25 or under is exempt to the extent of a maximum of $10,000, plus $1,000 f each full year remaining until he is aged 26. If the average income of the child for the pr vious three years is in excess of $5,000, the additional exemption is reduced by the exce A bequest to an infirm, wholly dependent child is exempt to the extent of a maximum $10,000, plus $1,000 for each full year remaining until he is aged 71. In all these cases, th exemption cannot exceed the value of the bequest. An indefeasible bequest to a charitab organization in Canada is also completely exempt.

After these deductions from aggregate net value are made, the amount left is th "aggregate taxable value" to which the tax rates are applied. The first bracket of th rate schedule—from $0 to $20,000 of aggregate taxable value—has a zero rate, which i effect constitutes a basic exemption of $20,000. The next $20,000 of aggregate taxab value has a rate of 15 p.c. and so on up to the maximum rate of 50 p.c. on the aggrega taxable value in excess of $300,000. Gifts made by the deceased during his lifetime th were not included in the value of his estate but were in excess of the gift tax exemptions a added to the aggregate taxable value to the extent of the excess, as is the amount of gi tax that would be payable on this excess using rates in force at the time of his death. Th is only for purposes of setting the rates of estate tax and an allowance is made in recognitio of the gift tax paid on them.

From the tax so calculated may be deducted in the following order (1) a tax abatement respect of property situated in a province that levies a succession duty, or in respect foreign personal property transmitted in such a province, (2) a credit for gift tax paid gifts made by the deceased in cases where the value of the property comprised in the has been included in computing the aggregate net value (e.g., where the gift has been de within three years of the death of the donor), (3) a credit for foreign death taxes, and the "notch" credit. The "notch" credit has the effect of preventing the tax otherwise able on an estate whose aggregate net value is immediately in excess of $50,000 from ucing the value after tax to less than $50,000; it also reduces the tax otherwise payable an estate whose value falls in this "notch" area so that the tax actually payable will not eed 50 p.c. of the difference between the aggregate net value and $50,000. The abate- nt referred to above is in recognition of provincial succession duties. It is a deduction 75 p.c. from the federal estate tax otherwise payable in respect of property situated, or eign personal property transmitted, in British Columbia, and of 50 p.c. in respect of such perty in Ontario or Quebec (see p. 1126).

Where an exemption from gift tax or estate tax in respect of a gift or bequest from a son to his spouse in the form of a trust or other settlement has been allowed, the property he settlement at the time of the death of the spouse second to die is deemed to be prop- passing on her (or his) death. Where the estate tax on such property would have n abated in recognition of provincial succession duties at the time of the death of the use first to die, but was not abated because the property was exempt, an appropriate tement is given at the time of the second death.

In general, the provisions described above apply in respect of property passing on the th of a person who dies on or after Oct. 23, 1968. (For the provisions of the estate tax licable in respect of property passing on the death of a person who died before Oct. 23, 8, see the 1968 Canada Year Book, pp. 1015-1016.)

The property situated in Canada of a deceased person not domiciled in Canada is ject to estate tax at a flat rate of 15 p.c. No deduction is allowed against the assessed ue of such property except for debts specifically chargeable to it. However, there is a cial provision that exempts all such property of less than $5,000 value and also provides t the tax must not reduce the value of the property after tax to less than $5,000. (The ate Tax Convention between Canada and the United States increases this figure to ,000.) Where property is subject to provincial succession duty, the 15-p.c. tax is ted by 50 p.c. in the case of property subject to Ontario or Quebec duty and by 75 p.c. h respect to property subject to British Columbia duty.

ise Taxes

The Excise Tax Act levies a general sales tax and special excise taxes. These taxes levied on goods imported into Canada and on goods produced in Canada. They are levied on goods exported. The sales tax, which is at the rate of 9 p.c., is levied on the ufacturer's sale price of goods produced or manufactured in Canada or on the duty-paid ue of goods imported into Canada. For alcoholic beverages and tobacco products, the price for purposes of the sales tax includes excise duties levied under the Excise Act p. 1134). An old age security tax of 3 p.c. is levied on the same basis as the 9-p.c. tax, ging the total sales tax to 12 p.c. (The total sales tax on most building materials l p.c.)

Some goods are exempt from sales tax. Foodstuffs, drugs, electricity and fuels for ting or heating are generally exempt, as are articles and materials used by public hos- ls and certain welfare institutions. The products of farms, forests, mines and fisheries to a large extent, exempt as well as most equipment used in farming and fishing. Ma- ery and equipment used directly in production and materials consumed or expended in duction are not taxed. Also, a number of items are exempt from sales tax when pur- sed by municipalities. These and other exemptions are set forth in schedules to the ise Tax Act.

A number of articles are subject to special excise taxes in addition to the sales t Where these are ad valorem taxes they are levied on the same price or duty-paid va as the general sales tax. Those levied at present are as follows:—

Cigarettes	3 cents per 5 cigs.
Cigars	17½ p.c. ad valorem
Jewellery, including clocks, watches, articles of ivory, amber, shell, precious or semi-precious stones, goldsmiths' and silversmiths' products except gold-plated or silver-plated ware for the preparation or serving of food or drink	10 p.c. ad valorem
Lighters	10 cents per lighter
Playing cards	20 cents per pack
Radios	the greater of $2 per radio or 15 p.c. ad valorem
Phonographs and television sets	15 p.c. ad valorem
Electron tubes, priced under $5 per tube, not including television picture tubes	10 cents per tube
Television set picture tubes	15 p.c. ad valorem
Slot machines—coin, disc or token-operated games or amusement devices	10 p.c. ad valorem
Matches	10 p.c. ad valorem
Tobacco—pipe tobacco, cut tobacco and snuff	90 cents per lb.
Tobacco pipes, cigar and cigarette holders and cigarette rolling devices	10 p.c. ad valorem
Toilet articles, including cosmetics, perfumes, shaving creams, antiseptics, etc	10 p.c. ad valorem
Wines—	
Manufactured in Canada—*	
Wines of all kinds containing not more than 7 p.c. absolute alcohol by volume	25 cents per gal.
Non-sparkling wines containing more than 7 p.c. absolute alcohol by volume but not more than 40 p.c. proof spirit	50 cents per gal.
Sparkling wines	$2.50 per gal.
Additional tax applying to all wines whether imported or produced in Canada—	
Wines of all kinds containing not more than 7 p.c. absolute alcohol by volume	2½ cents per gal.
Wines of all kinds containing more than 7 p.c. absolute alcohol by volume	5 cents per gal.
Insurance premiums paid to British or foreign companies not authorized to transact business in Canada or to non-resident agents of authorized British or foreign companies	10 p.c. of net premium for property, surety, fidelity and liability insurance. (Most other kinds of insurance are exempt.)

All the foregoing items, except insurance premiums, are also subject to the gene sales tax of 9 p.c. and the old age security tax of 3 p.c. Cigarettes, cigars and tobacco subject to further taxes, referred to as excise duties (see below).

Excise Duties

The Excise Act levies taxes (referred to as excise duties) on alcohol, alcoholic bev ages and tobacco products produced in Canada. These duties are not levied on impor goods but the customs tariff on these products includes a levy to correspond with the dut levied on domestic production. These duties are not levied on goods exported.

Spirits.—The duties are on a proof-gallon basis. These duties do not apply to de tured alcohol intended for use in the arts and in industry, or for fuel, light or power, or any mechanical purpose. The various duties are as follows:—

On every gallon of the strength of proof distilled in Canada	$14.25
On every gallon of the strength of proof used in the manufacture of—	
Medicines, extracts, pharmaceutical preparations, etc	$1.50 per gal.
Approved chemical compositions	15 cents per gal.
Spirits sold to a druggist and used in the preparation of prescriptions	$1.50 per gal.
Imported spirits when taken into a bonded manufactory in addition to other duties	30 cents per gal.

* The customs tariff on wines includes a levy to correspond with these taxes on domestic production.

Canadian Brandy.—Canadian brandy, a spirit distilled exclusively from juices of native ts without the addition of sweetening materials, is subject to a duty of $12.25 per proof on.

Beer.—All beer or other malt liquor is subject to a duty of 42 cents per gallon.

Tobacco, Cigars and Cigarettes.—The excise duties make up nearly as large a part of the l tax on tobacco products as the special excise taxes already described. The rates are ollows:—

On manufactured tobacco of all descriptions, except cigarettes	35 cents per lb.
Cigarettes weighing not more than 3 lb. per thousand (nearly all of the cigarettes used in Canada are of this type)	$4.00 per thousand
Cigarettes weighing more than 3 lb. per thousand	$5.00 per thousand
Cigars	$2.00 per thousand
Canadian raw leaf tobacco when sold for consumption	10 cents per lb.

mbined Effect of Excise Taxes and Excise Duties on Tobacco Products

Bringing together the taxes imposed on tobacco products under the Excise Tax Act the duties imposed under the Excise Act gives the following total taxes:—

Cigarettes	$10.00 per thousand (20 cents per pack of 20 cigarettes) plus the 12-p.c. sales tax on the manufacturer's sale price
Manufactured tobacco	$1.25 per lb. plus the 12-p.c. sales tax on the manufacturer's sale price
Cigars	$2.00 per thousand plus the 17½-p.c. special excise tax and the 12-p.c. sales tax on the manufacturer's sale price.

stoms Duties*

Most goods imported into Canada are subject to customs duties at various rates as vided by tariff schedules. Customs duties, which once were the chief source of revenue the country, have declined in importance as a source of revenue to the point where they provide less than 10 p.c. of the total. Quite apart from its revenue aspects, however, tariff still occupies an important place as an instrument of economic policy.

The Canadian Tariff consists mainly of three sets of rates, namely, British Preferential, st-Favoured-Nation and General. The British Preferential rates are, with some exceps, the lowest rates. They are applied to imported dutiable commodities shipped ctly to Canada from countries within the Commonwealth. Special rates lower than ordinary preferential duty are applied on certain goods imported from designated mmonwealth countries.

The Most-Favoured-Nation rates apply to goods from countries that have been rded tariff treatment more favourable than the General Tariff but which are not entitled he British Preferential rate. Canada has Most-Favoured-Nation arrangements with ost every country outside the Commonwealth. The most important agreement prong for the exchange of Most-Favoured-Nation treatment is the General Agreement on iffs and Trade.

The General Tariff applies to imports from countries not entitled to either the Prefatial or Most-Favoured-Nation treatment. Few countries are in this category and, in ns of trade coverage, are negligible.

In all cases where the tariff applies there are provisions for drawbacks of duty on orts of materials used in the manufacture of products later exported. The purpose of e drawbacks is to assist Canadian manufacturers to compete with foreign manufacrs of similar goods. There is a second class of drawbacks known as "home consump" drawbacks. These apply to imported materials used in the production of specified ses of goods manufactured for home consumption.

The tariff schedules are too lengthy and complicated to be summarized here but the s that apply on any particular item may be obtained from the Department of National enue, which is responsible for administering the Customs Tariff.

* See also p. 1109.

Subsection 2.—Provincial Taxes

All of Canada's ten provinces impose a wide variety of taxes to raise the reven necessary for provincial purposes. All provinces levy a tax on the income of individua and corporations resident within their boundaries or deriving income from activities operations carried out therein. Only the Provinces of Ontario and Quebec impose speci taxes on corporations in addition to income tax and only the Provinces of Ontario, Queb and British Columbia impose a tax on property passing at death; the remaining provinc receive payment from the Federal Government of their 75-p.c. share of estate tax levi Under the terms of the existing federal-provincial fiscal arrangements, the Federal Gover ment makes "equalization payments" to some provinces in recognition of the fact th the potential tax yield in those provinces, measured on a per capita basis, is lower th the national per capita tax yield. For some provinces, the equalization payments constitu a very important source of revenue.

Some of the more important provincial levies are reviewed briefly on this and follo ing pages.

Individual Income Tax

All provinces levy a tax on the income of individuals who reside within their boundari or who earn income therein. In nine of the ten provinces, these taxes are computed as percentage of federal "basic tax". As previously explained, "basic tax" is federal incon tax (excluding old age security tax and the social development tax) otherwise payable full federal rates before the abatement under the federal-provincial fiscal arrangemen and before allowance for the federal tax reduction passed in 1966. These provincial tax are collected by the Federal Government on behalf of these provinces. In Quebec, pr vincial income tax is levied at graduated rates that progress from 5.5 p.c. on the first $1,0 of taxable income to a maximum of 40.0 p.c. on the excess over $400,000. In additio a 6-p.c. surtax was levied for the taxation years 1968, 1969 and 1970. The determinati of taxable income for Quebec tax is based on exemptions and deductions which, with the e ception of deductions for dependent children eligible for family allowances,* are similar those for federal tax. Quebec taxpayers whose net income does not exceed $4,000 if marri or in a situation recognized as equivalent and $2,000 in other cases are exempt from pa ment of the tax. If the taxpayer's income exceeds such amounts, the tax to be paid w not reduce his income to less than $4,000 or $2,000 as the case may be. The Province Quebec collects its own tax.

The percentages that provincial income tax liability is of federal "basic tax" for 19 are: Prince Edward Island, Nova Scotia, Ontario and British Columbia each 28 p.c Newfoundland and Alberta 33 p.c., Saskatchewan 34 p.c., New Brunswick 38 p.c., Manitob 39 p.c. and Quebec approximately 50 p.c.

Corporate Income Tax

All provinces levy a tax on the profits of corporations derived from activities carri out within their boundaries. In all provinces except Ontario and Quebec, the provinci tax imposed on taxable income in the province is determined on the same basis as for feder income tax. In Ontario and Quebec, the determination of taxable profits for purposes provincial tax follows closely the federal rules. Six of the ten provinces levy corpora income taxes at rates in excess of the 10-p.c. abatement allowed by the Federal Governmen The rate that applies in Saskatchewan and Alberta is 11 p.c., in Ontario and Quebec, 12 p. and in Newfoundland and Manitoba, 13 p.c. All provinces except Ontario and Queb have signed agreements for the collection of the corporate income taxes by the Feder Government.

* Quebec has a family allowance program which supplements the federal program; it provides for half-year allowances that range from $15 for one child to $142.50 for six, and an extra $35 for each child after the sixth. T Quebec program is in lieu of exemptions for provincial income tax purposes for children eligible for family allowanc

(See also p. 390.)

xes on Alcoholic Beverages and Tobacco

Generally speaking, the sale of spirits in all provinces is made through provincial ncies operating as boards or commissions which exercise monopolistic control over oholic beverages. The provincial mark-up over the manufacturer's price is the effective ans of taxation. Beer and wine may be sold by retailers or government stores, depending the province, but in all cases these sales contribute to provincial revenues. The Prov- e of Prince Edward Island imposes a tax of 10 p.c. on all beer, wine and spirits sold at ail, collected under authority of the Health Tax Act, and in Newfoundland a tax of .c. is imposed at retail level.

All provinces except British Columbia impose special retail taxes on the sale of tobacco ducts. The rates of tax on cigarettes are as follows: Newfoundland, $\frac{1}{2}$ cent per cigarette; nce Edward Island, Nova Scotia, New Brunswick, Quebec, Ontario and Manitoba, s cent per cigarette; and Saskatchewan and Alberta, $\frac{8}{25}$ths cent per cigarette. In dition, the provinces impose special taxes on cigars and cut tobacco.

tail Sales Taxes

Retail sales taxes are levied on the final purchaser or user and are collected by the ailer. All provinces except Alberta levy this type of tax at rates as follows: Newfound- d, Prince Edward Island and Nova Scotia, 7 p.c.; New Brunswick and Quebec, 8 p.c.; d Ontario, Manitoba, Saskatchewan and British Columbia, 5 p.c. These direct levies ply to tangible taxable commodities sold, with varying exemptions, for consumption the province and to a few selected services, for example: to telephone services in all vinces; in Quebec, to telecommunications, meals and hotel and motel charges; in Prince ward Island, to laundry and dry cleaning services, to accommodations, and to repair and tallations labour; in New Brunswick, to telecommunications, to meals and hotel and tel charges and to laundry and dry cleaning charges; and in Manitoba, to a broad range services including dry cleaning, furniture repairs, motel accommodation, etc. The sales es do not apply to goods sold for delivery in other provinces or to exported commodities. provinces imposing sales taxes provide comprehensive exemptions for foodstuffs and igs; in Quebec, pharmaceutical products are exempt only when sold on prescription.

nusement Taxes

Each of the provinces with the exception of Newfoundland, Alberta, Saskatchewan d British Columbia has a tax on admission to places of entertainment. In Quebec, this is payable on race course admissions only. In addition, there is generally a licence fee posed on the operator or owner of these amusement places. The tax on admissions is hin the range of 5 p.c. to 15 p.c.

soline and Diesel Fuel Oil Taxes

Each of the ten provinces imposes a tax on the purchase of gasoline by motorists and ckers. The rates vary from 13 cents per gallon in British Columbia to 21 cents in nce Edward Island and 25 cents in Newfoundland. The amount of tax borne by one lon of motor vehicle fuel in each province is as follows:—

	Gasoline	*Diesel Fuel*		*Gasoline*	*Diesel Fuel*
	cts.	cts.		cts.	cts.
Newfoundland	25	25	Ontario[2]	18	24
Prince Edward Island[1]	21	21	Manitoba[3]	17	20
Nova Scotia	21	27	Saskatchewan[4]	19	21
New Brunswick	20	23	Alberta	15	17[5]
Quebec[2]	19	25	British Columbia	13	15

[1] Gasoline and diesel fuel used by primary producers—farmers, fishermen, manufacturers and processors—are npt from tax as are also gasoline and motor fuel used by owners or operators of registered pleasure craft and ski- s, and that used by consumers engaged in the construction of the Northumberland Strait Crossing. [2] Some f from taxation is given where gasoline or fuel oil is used for farming, manufacturing, commercial fishing and in ionary engines. [3] Exemptions are allowed on purple fuel used in operating agricultural machinery, farm ks and municipal fire apparatus, and in trapping, fishing and prospecting. [4] Gasoline and diesel fuel used farmers in farm machinery and trucks are exempt from tax. [5] Three cents less for domestic heating. erally, fuel oil used for agricultural and industrial purposes is taxed at three cents per gallon.

The British Columbia net tax rate (after refund) on gasoline used in logging truc off highway, in power units of motor vehicles for stationary industrial use, and in vehicl used by amputees, paraplegics and certain war disability pensioners is one cent per gall Gasoline coloured purple for certain off-highway use (including marine) and motor fue being any fuel except gasoline not consumed on provincial highways, are also taxed at o cent per gallon. Fuel oil used for heating purposes is taxed at one half cent per gallo

Motor Vehicle Licences and Fees

Each province levies a fee on the annual registration of motor vehicles, which is co pulsory. Upon registration, a vehicle is issued with licence plates. The rates of fee va from province to province and, in the case of passenger cars, may be assessed on the weig of the vehicle, the wheel base, the year of manufacture, the number of cylinders of t engine, or at a flat rate. The fees for commercial motor vehicles and trailers are based the gross weight for which the vehicle is registered, i.e., the weight of the vehicle emp plus the load it is permitted to carry. Every operator or driver of a motor vehicle is r quired to register periodically and pay a fee for a new driver's licence. The licences a valid for periods of from one to five years and the fees vary from $1 to $7 a year.

Taxes on Mining Operations

All provinces except Prince Edward Island levy taxes of various kinds on mini operations. All provinces except Prince Edward Island and Alberta impose a tax on t income of firms engaged in mining operations in general or in specific kinds of mini operations. The Provinces of British Columbia, Alberta, Saskatchewan and Manitol (gas, oil and potash only) impose a tax on the assessed value of minerals or a flat rate p acre of mining property. Quebec levies a tax on the economic value of the ore at the p head, ranging between 9 and 15 p.c., depending on volume. Ontario imposes a tax on t profit on the assessed value of minerals and a flat rate per acre of mining property. Ma toba imposes a flat rate of 15 p.c. if mining income exceeds $50,000. The British Columb mining tax rate is 15 p.c. on net income from mining in excess of $10,000.

Tax on Logging Operations

The Provinces of Quebec, Ontario and British Columbia levy a tax on the income fro logging operations of individuals, partnerships, associations or corporations engaged in th activity. In Quebec and Ontario the rate is 10 p.c. and in British Columbia 15 p.c. on n income where in excess of $10,000 (in Quebec and British Columbia if the net income greater than $10,000 the whole amount is taxable with no basic exemption). In Ontar and Quebec one third and in British Columbia 20 p.c. of the tax is allowed as a deducti from provincial corporate income tax or, in Quebec, from the provincial income tax; tv thirds of the provincial tax is deductible from federal income tax.

Business Taxes

The Province of Quebec imposes a tax of one fifth of 1 p.c. on paid-up capital of corpor tions and Ontario levies a similar tax at the rate of one tenth of 1 p.c.

The Province of Quebec has a place-of-business tax, which is generally $50 but is r duced to $25 when the paid-up capital is less than $25,000; in the case of loan compani the tax is $100 when fixed capital exceeds $100,000.

Both Ontario and Quebec levy special taxes on certain kinds of companies such as bank railway companies, express companies, trust companies and sleeping-car, parlour-car a dining-car companies. In Ontario, these special taxes (except the tax payable by insuran corporations calculated on gross premiums) and the paid-up capital tax are payable ov and above the corporation income tax.

The Province of Prince Edward Island charges special annual licence fees to most urance companies, banks, acceptance companies, chain theatres and chain stores, steam- p companies, telephone, telegraph and electric light companies and brokers, as well as minal licence fees to other incorporated companies, the latter being similar to filing fees other provinces.

nd Transfer Taxes

Ontario levies a tax based on the price at which ownership of land is transferred; one h of 1 p.c. is imposed on the purchase price up to $25,000 and two fifths of 1 p.c. on any- ng in excess of that amount. In Alberta, a registration fee is charged proportional to assessed value of the land; $5 for the first $1,000 and $1 for each additional $1,000 up to 5,000 and two fifths of 1 p.c. in excess of that amount. In addition, there is an Assurance nd fee charged on transfers of mortgages on the difference between the old purchase ce and the new purchase price at the rate of $2 per $1,000 up to $5,000 and $1 for each ditional $1,000. British Columbia and Saskatchewan do not have a land transfer tax t have an equivalent in land title fees which are based on land values.

x on Security Transfers

The Provinces of Ontario and Quebec levy a tax on the sale price of securities trans- red; the rates in both provinces are:—

Shares sold, transferred or assigned valued at—	
Under $1	1/10th of 1 p.c. of value
$ 1 to $ 5	1/4 cent per share
$ 5 to $ 25	1 cent per share
$25 to $ 50	2 cents per share
$50 to $ 75	3 cents per share
$75 to $150	4 cents per share
Over $150	4 cents per share plus 1/10th of 1 p.c. of value in excess of $150
Bonds and debentures	3 cents for every $100 or fraction thereof of par value.

x on Premium Income of Insurance Companies

All ten provinces impose a tax of 2 p.c. on the premium income of insurance companies ative to risks incurred in the province. Saskatchewan imposes a tax of 1 p.c. on the tor vehicle premium income of insurance companies to finance a comprehensive high ool driver-training program.

ccession Duties

Only the Provinces of Ontario, Quebec and British Columbia levy succession duties. ese duties are a tax upon the right to succeed to property and are assessed upon the erest or benefit passing at death to an heir or beneficiary. The three provinces impose ccession duties on all property situated in the province belonging to the deceased and ssing at his death whether the deceased was domiciled in the province or elsewhere. rsonal property, wherever situated, of a person dying domiciled within the province is o liable if passing to a successor resident or domiciled in the province.

The rates of succession duty are generally governed by the value of the estate, the ationship of the beneficiary to the deceased and the amount going to any one person. British Columbia, exemptions allowed in determination of the estate value also vary cording to the relationship to the deceased. The rate of tax increases as the degree of ationship between the deceased and his successor becomes more remote.

Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Manito Saskatchewan and Alberta, while not imposing succession duties, each receives 75 p.c the Federal Government estate tax levied on property situated within its borders. In B Saskatchewan and Alberta the share of estate tax is rebated in full where the deceased w bona fide resident of the province and up to 75 p.c. of the share of estate tax for a dece domiciled out of the province whose beneficiary is domiciled in the province.

Provincial Property Taxes

In unorganized (non-municipal) areas, British Columbia levies property taxes varying rates according to class for provincial revenue. Improved forest and tree-f lands are taxed at 1 p.c. of assessed value; farm land at one half of 1 p.c.; wild land at 3 p coal land at 2 p.c. (non-operating) or 7 p.c. (operating); and timber land at $1\frac{1}{2}$ p.c. unorganized (non-municipal) areas, Ontario levies a property tax of $1\frac{1}{2}$ p.c. of asse value; the minimum annual tax in respect of any land is $6. New Brunswick levies a of $1.50 per $100 market value assessment on all land and buildings in the province an similar tax on business occupancy, to finance education, health, welfare and justice servi

Race Track Taxes

Ontario levies a tax on operators of race meets and on holders of winning tickets iss under the pari-mutuel system. Holders of winning tickets must pay a tax equal to 7 of the amount that would be payable to them if no percentage were deducted by the per holding the race meet. A number of other provinces levy a pari-mutuel tax on mo bet in the province on horse races; in Newfoundland the rate is 11 p.c., in Prince Edw Island $11\frac{1}{2}$ p.c., in Nova Scotia 11 p.c. on the first $400,000 wagered and a reduced perce age on any additional money wagered (some of this money is refundable to the individ race tracks), in New Brunswick 11 p.c. less commission of 8 p.c., in Manitoba 10 p.c. commission of 15 p.c., in Alberta 5 p.c., in Saskatchewan 10 p.c., and in Quebec 7 p.c. ordinary pools and 9 p.c. on special pools (quinella and daily-double). In British Colum the tax is 12 p.c. but the province returns $2\frac{1}{2}$ p.c. of money bet to horsemen and tr operators for purses, etc.

Miscellaneous Provincial Taxes

In Newfoundland a tax of 7 p.c. is levied on premiums paid for all types of insura except life, accident and sickness, and marine; and a telegraph tax is levied on compan operating cables or wireless stations between Newfoundland and points outside the provi at the yearly rate of $4,000 a cable or station.

In Prince Edward Island a fire marshal's tax is levied at the rate of $\frac{3}{4}$ of 1 p.c. premiums paid for fire insurance. In Nova Scotia a fire marshal's tax is levied at the r of one half of 1 p.c. on premiums paid for fire insurance in the province. A tax is a levied on long-distance telephone calls at the rate of five cents on the first 50 cents wit five-cent minimum and five cents on each additional 50 cents, applying only to calls ma within the province.

Subsection 3.—Municipal Taxes

The municipalities in Canada levy taxes on the owners of property situated wit their jurisdiction according to the assessed value of such property. Methods of determini assessed value vary widely but for taxation purposes it is generally considered to be percentage of the actual value or, as in Nova Scotia and New Brunswick, of the act market value. The revenues from such taxes are used generally to pay for street ma tenance, schools, police and fire protection, snow removal in certain communities and ot community services; in New Brunswick the municipal levy is used only for property servi Special levies are sometimes made on the basis of street frontage to pay for local impro

ents to the property, such as sidewalks, roads and sewers. Not only is there a widespread fference in the bases used for property tax but there is also a wide variety of rates applied, pending on the municipality.

In addition to the taxes described above, municipalities usually impose a charge for the ater consumption of each property holder or a water tax based upon the rental value of the operty occupied. In New Brunswick, utilities (water, domestic sewerage and treatent, and electric power) must be financed on a user-charge basis; a part of the water dget may be transferred to the general budget on a hydrant-rental basis or a percentage the budget, depending on the size of the municipal population. There are no municipal come taxes although certain localities have retained the use of a poll tax. In Newfoundnd, Quebec and Saskatchewan, municipalities are empowered to levy an amusement x on the admission of persons to places of entertainment, although the amusement tax is nerally a provincial preserve (see p. 1137). Electricity and gas are taxed at the consumer vel in some western municipalities and in some New Brunswick municipalities, and coal d fuel oil for heating purposes are chargeable in urban areas of Newfoundland. Teleone subscribers are subject to a special levy in Montreal and certain Ontario municilities impose a tax on the gross receipt of telephone companies.

In most municipalities, a tax is levied directly on the tenant or the operator of a siness. In general, business tax rates are lower than those applying to property. In w Brunswick, business assessment is equal to the value of the real property occupied business purposes. Three bases of assessment are in use—a fraction of the property sessment, the annual rental value of the premises, or the area of the premises. Certain unicipalities may charge a licence fee instead of a business tax but others charge both a ence fee and a business tax.

Subsection 4.—Miscellaneous Levies

These are not generally referred to as taxes but they are similar to taxes in many ways.

nemployment Insurance

A national program of unemployment insurance operates in Canada. Essentially, provides relief to those qualified persons who temporarily find themselves without work. is administered by a federal commission appointed for this purpose and financed by ual contributions from employers and employees plus a contribution from the Federal overnment. The amount paid into the fund by employee and employer is directly prortional to the weekly wages of the employee. The rates of contributions, together th statistics on the operation of the program, are given at pp. 880-884.

orkmen's Compensation

Legislation in force in all provinces provides compensation for personal injury suffered workmen as a result of industrial accidents. In general, these provincial statutes ablish an accident fund administered by a Board to which employers are required to ntribute at a rate proportional with the hazards of the industry. See also pp. 884-885.

spital Insurance

A federal-provincial hospital insurance plan has been adopted by each of the ten nadian provinces. Under this arrangement, the Federal Government pays approxitely one half of the cost of hospitalization for patients who are participants under the an. The provinces meet the remainder of the cost. Provincial revenues for this purpose raised by various means. The Province of Quebec has increased its personal and rporation income tax. Certain provinces require the deduction of a monthly premium m the wages of their residents as a contribution or premium for the plan. In such

provinces non-salaried people must also pay the premium directly if they wish to be cove by the plan. In some other provinces the proceeds of a retail sales tax are earmarked whole or in part for the support of the hospital plan. See also pp. 335-337.

Canada and Quebec Pension Plans

In 1966, the Canada Pension Plan, a compulsory government-operated pension p gram, was introduced whereby each contributor builds up a right to a graduated pensi the amount of which is related to his earnings up to a certain level. This graduated ben supplements the universal old age security pension which is paid out of tax revenu It operates throughout the country except in the Province of Quebec where a similar pens plan is operated by the government of the province. Both plans have disability and s vivor benefits. They are described at pp. 374-378.

Section 3.—Federal Government Finance

Subsection 1 of this Section contains financial statistics of the Federal Governm prepared as far as possible in accordance with the classifications, concepts and definiti used in the preparation of provincial and municipal finance statistics. These tables di from the information presented in Subsection 2 in that the latter has been extracted direc from the *Canada Gazette*. Detailed reports published by the Dominion Bureau of Statist provide reconciliations of revenue, expenditure and debt as set out in Subsections 1 and The *Canada Gazette* presentation is included because there is interest in and use for inform tion on this basis.

Subsection 1.—DBS Statistics of Federal Government Finance

Revenue and Expenditure.—Table 3 shows details of net general revenue of t Federal Government for the years ended Mar. 31, 1968 and 1969.

3.—Details of Net General Revenue of the Federal Government, Years Ended Mar. 31, 1968 and 1969

Source	1968	1969	Source	1968	1969
	$'000	$'000		$'000	$'000
Taxes—			Privileges, Licences and Permits—		
Income—			Natural resources	4,292	12,
Corporation[1]	1,820,589	2,213,040	Other	11,515	16,
Individual[1]	3,649,674	4,334,430	Sales and services other than institutional	198,047	229,
On certain payments and credits to non-residents	220,472	205,566	Fines and penalties	6,138	5,
General sales[1]	2,145,609	2,097,963	Exchange fund profits	55,189	84,
Excise Duties and Special Excise Taxes—			Own enterprises	189,723	200,
Alcoholic beverages	300,274	321,041	Bullion and coinage	17,152	78,
Tobacco	460,262	497,517	Postal service	327,224	363,
Other	99,948	66,148	Other revenue	8,901	5,
Customs import duties	746,437	761,681			
Estate taxes	102,192	112,377			
Other	12,024	9,428			
Totals, Taxes	9,557,481	10,619,191	**Totals, Net General Revenue**	**10,375,662**	**11,614,**

[1] Includes old age security taxes.

Table 4 gives details of the amounts paid by the Federal Government to provinc governments, territories and local governments for the year ended Mar. 31, 1969, a Table 5 gives details of cost of services provided, by function, for the years ended Mar. 1968 and 1969.

V—Payments by the Federal Government to Provincial Governments, Territories and Local Governments, Year Ended Mar. 31, 1969

Payee and Purpose	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	All Provinces	Y.T.	N.W.T.	Canada
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Provincial Governments and Territories														
Unconditional Transfers—														
Federal-provincial fiscal arrangements	73,127	14,789	88,038	76,594	279,645	21,677	45,009	22,377	6,860	−652	627,464	5,576[1]	6,232[1]	639,272
Share of income tax on power utilities	1,223	232	1,912	122	2,875	5,463	924	35	7,431	561	20,778	167	39	20,984
Statutory subsidies	9,656	657	2,132	1,745	4,023	4,624	2,127	2,142	2,965	1,673	31,744	—	—	31,744
Compensation due to withdrawal from joint programs	—	—	—	—	186,925	—	—	—	—	—	186,925	—	—	186,925
Grants in lieu of taxes on federal property (municipal purposes)	—	—	—	920	—	—	—	—	—	400	1,320	—	—	1,320
Totals, Unconditional Transfers	84,006	15,678	92,082	79,381	473,468	31,764	48,060	24,554	17,256	1,982	868,231	5,743	6,271	880,245
Conditional Transfers—														
Protection of persons and property	—	—	—	—	—	—	—	—	—	—	—	228	28	256
Transportation and Communications—														
Trans-Canada Highway	9,055	227	10,045	3,202	8,761	3,100	1,160	649	619	494	37,312	—	—	37,312
Roads leading to resources	750	—	—	58	—	—	—	34	—	—	842	—	—	842
Trunk highway program	3,888	3,241	7,966	3,272	—	—	—	—	—	—	18,367	—	—	18,367
Other transportation and communications	—	120	6	150	740	2,195	—	14	105	309	3,639	4	—	3,643
Health—														
Hospital insurance and diagnostic services	19,004	3,692	28,231	22,713	—	284,665	35,455	32,963	61,650	71,912	560,285	500	1,148	561,933
Hospital construction	119	128	757	165	584	6,951	506	819	1,486	2,494	14,009	—	—	14,009
Professional training	63	18	131	69	—	558	71	90	220	110	1,330	—	—	1,330
General public health	484	180	656	555	360	6,650	841	849	1,197	1,678	13,450	—	101	13,551
Tuberculosis control	135	19	59	63	103	478	84	74	119	160	1,294	17	—	1,311
Mental health	197	120	352	297	—	2,878	584	372	644	824	6,268	32	—	6,300
Cancer control	4	16	58	65	—	648	—	95	143	184	1,213	—	—	1,213
Child and maternal health	55	12	106	74	198	37	37	85	134	80	818	—	—	818
Public health research	5	14	150	35	870	1,351	437	351	236	749	4,198	—	2	4,200
Health resources fund	86	80	3,609	1,322	9,667	14,853	213	73	2,491	1,529	33,923	—	—	33,923
Medical rehabilitation and crippled children	94	13	77	95	36	109	141	105	72	275	1,017	—	—	1,017
Other health	—	—	—	—	128	129	—	11,297	—	21,669	33,223	—	250	33,473

[1] Federal tax abstention grant.

4.—Payments by the Federal Government to Provincial Governments, Territories and Local Governments, Year Ended Mar. 31, 1969 —concluded

Payee and Purpose	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	All Provinces	Y.T.	N.W.T.	Canada
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Provincial Governments and Territories—concluded														
Conditional Transfers—concluded														
Social Welfare—														
Old age assistance	189	18	613	683	−54	142	545	−19	376	844	3,337	3	30	3,370
Blind persons allowances	277	40	405	345	—	179	187	67	229	301	2,030	4	23	2,057
Disabled persons allowances	491	30	1,640	1,108	−1	2,708	1,186	768	1,066	1,277	10,273	1	14	10,288
Winter works projects	123	178	39	137	10,464	5,436	604	683	1,903	1,883	21,450	2	62	21,514
Canada assistance plan	21,062	2,559	11,074	9,906	−33	118,957	13,982	14,130	28,813	37,216	257,666	85	104	257,855
Other social welfare	603	30	42	12	—	2,016	183	154	63	88	3,191	20	31	3,242
Recreational and Cultural Services—														
Parks	—	—	—	—	—	—	—	—	—	—	—	43	13	56
Fitness and amateur sport	79	57	56	60	—	238	62	62	119	88	821	35	86	942
Other	—	—	—	—	—	—	—	—	—	—	—	54	—	54
Education—														
Capital assistance to trade and vocational schools	—	200	10,150	9,814	55,821	9,202	7,203	6,791	1,709	5,060	105,950	—	—	105,950
Technical and vocational training	252	179	—	249	1,630	372	46	102	170	—	3,000	—	—	3,000
Post-secondary education	3,272	1,054	12,287	3,956	62,889	117,296	10,106	15,656	32,963	17,121	276,600	—	—	276,600
Other Education—														
Canada Student Loan Act	—	—	—	—	2,403	—	—	—	—	—	2,403	—	—	2,403
Language texts for citizenship classes	—	—	—	—	—	55	1	—	3	—	59	—	—	59
Citizenship and language instruction for immigrants	—	—	2	—	—	449	3	—	4	28	486	—	—	486
Natural Resources and Primary Industries—														
Fish and Game—														
Programs and projects shared by provinces	511	22	232	172	154	33	—	—	—	14	1,138	—	—	1,138
Assistance in construction of fishing vessels	542	468	378	8	354	—	—	—	—	—	1,750	—	—	1,750
Relocating families from isolated fishing areas	1,400	—	—	—	—	—	—	—	—	—	1,400	—	—	1,400
Game management	—	—	—	—	—	—	—	—	—	—	—	—	445	445
Forests	683	—	—	100	—	—	—	—	—	—	783	—	—	783
Lands: Settlement and Agriculture—														
Agricultural and rural development	500	316	1,840	1,420	5,717	5,634	1,784	2,949	2,396	1,930	24,486	—	—	24,486
Crop insurance	—	14	—	—	1,200	226	1,024	732	1,438	217	4,851	—	—	4,851

Agricultural and rural development	300	213	1,200	1,500	226	1,824	232	1,338	217	1,291	—	—	1,291
Agricultural assistance	—	13	—	1,046	330	1,054	323	1,338	217	1,645	—	—	1,646
Water Resources—														
Conservation and control of water resources	—	—	—	—	—	1,348	1,026	—	—	246	2,620	—	—	2,620
Power developments (Atlantic Development Board)	181	3	6,058	—	—	—	—	—	—	—	6,242	—	—	6,242
Other natural resources and primary industries	—	—	—	—	—	—	—	—	—	46	46	—	—	46
Other Expenditure—														
Housing (slum clearance, urban renewal, etc.)	215	—	—	—	—	—	—	—	—	—	215	35	—	250
Emergency measures	83	37	139	44	1,176	1,273	177	157	290	357	3,733	—	14	3,747
Totals, Conditional Transfers	64,403	13,093	97,193	61,795	163,268	590,393	77,675	90,130	140,748	169,197	1,467,895	1,063	2,351	1,471,309
Totals, Transfers to Provincial Governments and Territories	**148,409**	**28,771**	**189,275**	**141,176**	**636,736**	**622,157**	**125,735**	**114,684**	**158,004**	**171,179**	**2,336,126**	**6,806**	**8,622**	**2,351,554**
Municipal Governments														
Unconditional Transfers—														
Grants in lieu of taxes on federal property	326	191	2,983	—	9,612	21,833	2,724	1,313	2,871	3,823	45,676	104	237	46,017
Special grants	—	—	—	1,611[1]	—	—	—	—	—	—	1,611	—	—	1,611
Conditional Transfers—														
Transportation and communications	—	—	6	67	582	6,477	625	17	430	820	9,024	—	—	9,024
Health	46	26	79	21	1,742	3,515	161	154	103	226	6,073	—	—	6,073
Education	—	—	69	25	806	1,085	970	762	1,041	1,259	6,017	26	—	6,043
Other (slum clearance, urban renewal and other)	99	113	3,238	164	1,455	8,824	901	89	1,120	1,275	17,278	—	—	17,278
Totals, Transfers to Municipal Governments	**471**	**330**	**6,375**	**1,888**	**14,197**	**41,734**	**5,381**	**2,335**	**5,565**	**7,403**	**85,679**	**130**	**237**	**86,046**
Grand Totals	**148,880**	**29,101**	**195,650**	**143,064**	**650,933**	**663,891**	**131,116**	**117,019**	**163,569**	**178,582**	**2,421,805**	**6,936**	**8,859**	**2,437,600**

[1] Financial assistance to the town of Oromocto.

5.—Details of Cost of Federal Services Provided, Years Ended Mar. 31, 1968 and 1969

Function	1968	1969
	$'000	$'000
General Government Services	**474,674**	**688,033**
Executive and administrative	416,227	612,972
Legislative	21,565	34,578
Research, planning and statistics	30,424	33,577
Other	6,458	6,906
Protection of Persons and Property	**219,303**	**237,414**
Law enforcement	17,148	18,517
Corrections	63,068	60,822
Police protection	118,855	135,647
Other	20,232	22,428
Transportation and Communications	**657,433**	**592,765**
Air	102,501	117,345
Road	145,613	111,511
Rail	153,997	116,734
Water	200,432	171,640
Telecommunications	46,548	59,682
Other	8,342	15,853
Health	**617,829**	**746,660**
Hospital care	501,644	594,024
General health	6,416	6,703
Public health	56,769	56,475
Medical, dental and allied services	53,000	56,492
Medical care	—	32,966
Social Welfare	**2,580,356**	**2,852,144**
Old Age Security Fund pensions	1,388,119	1,541,320
Old age assistance	8,896	3,370
Aid to the blind	2,383	2,126
Aid to the disabled	9,719	10,523
Aid to the unemployed and unemployable	116,886	128,714
Employment services	46,283	79,282
Family allowances	564,559	616,111
Labour	9,733	6,467
Winter work projects	30,516	21,514
Adult training and retraining	112,861	109,959
Canada Assistance Plan	225,612	257,855
Other	64,789	74,903
Recreational and Cultural Services	**108,825**	**86,060**
Archives, art galleries, museums, libraries	33,587	28,859
Parks	23,969	29,025
Other	51,269	28,176
Education	**452,627**	**592,495**
Indian and Eskimo schools	71,508	88,127
Universities, colleges and other schools	325,751	402,550
Purchased manpower training services	—	81,665
Other	55,368	20,153
Natural Resources and Primary Industries	**684,450**	**692,363**
Fish and game	94,299	83,132
Forests	23,925	24,392
Lands: settlement and agriculture	376,965	422,661
Minerals and mines	92,417	64,448
Water resources	27,591	26,799
Other	69,253	70,931
Trade and Industrial Development	**211,957**	**195,885**
National Capital Region Planning and Development	**22,879**	**19,928**
Defence Services	**1,783,965**	**1,796,956**
Veterans' Pensions and Other Benefits	**401,039**	**427,897**
Debt Charges (excluding retirements)	**939,695**	**1,074,371**
Commission on sale of securities and management charges	21,233	27,064
Amortization of discount on securities sold	10,166	10,409
Interest	906,170	1,036,898
Other	2,126	—
Own Enterprises	**217,831**	**224,995**

5.—Details of Cost of Federal Services Provided, Years Ended Mar. 31, 1968 and 1969 —concluded

Function	1968	1969
	$'000	$'000
ernational Co-operation and Assistance	**167,353**	**149,214**
ner Expenditures	**742,914**	**928,446**
Citizenship and immigration	24,420	33,475
External affairs	50,197	61,164
Postal services	374,168	430,608
Royal Canadian Mint	3,997	4,379
Housing research and slum clearance	15,514	30,022
Emergency measures	10,156	7,275
Other	264,462	361,523
onditional Transfers[1]	**791,947**	**927,873**
To Provincial Governments	748,031	880,245
Statutory subsidies	*31,747*	*31,744*
Federal-provincial fiscal arrangements	*555,469*	*639,272*
Compensation due to withdrawal from joint programs	*152,965*	*186,925*
Share of income tax on power utilities	*6,700*	*20,984*
Grants in lieu of taxes on federal property (municipal purposes)	*1,150*	*1,320*
To Local Governments	43,916	47,628
Grants in lieu of taxes	*42,066*	*46,017*
Special grants	*1,850*	*1,611*
Totals, Cost of Services Provided	**11,075,077**	**12,233,499**

[1] Conditional transfers are classified by function. See Table 4 for details of all transfers to provincial governments, territories and local governments.

Debt.—In Table 6, direct debt represents total liabilities less investments held for rement of unmatured bonded debt, and indirect debt consists of guarantees of direct t of other authorities by the Federal Government. Table 7 gives the gross bonded debt he Federal Government and the average interest rates and terms of issue as at Mar. 31, 8-70, together with place of payment.

Direct and Indirect Debt (less Investments Held for Retirement of Unmatured Bonded Debt) of the Federal Government as at Mar. 31, 1968 and 1969

Nature of Debt	1968	1969
	$'000	$'000
Direct Debt		
led debt	18,099,875	19,260,958
Less: investments held for retirement of unmatured bonded debt	8,140	6,378
Item 1 less item 2	18,091,735	19,254,580
t-term treasury bills	2,480,000	2,840,000
unts and other payables	2,328,760	2,252,148
uity, insurance and pension accounts	9,052,968	10,520,063
r liabilities	613,639	555,047
Totals, Direct Debt (less Investments Held for Retirement of Unmatured Bonded Debt)	**32,567,102**	**35,421,838**
Indirect Debt		
anteed bonds	1,197,181	1,131,366
anteed bank loans	438,103	753,735
r Guarantees—		
Loans by lenders under Pt. IV of the National Housing Act 1954	20,209	21,116
nsured loans under the National Housing Act 1954	6,311,000	6,732,000
nsurance guarantees and long-term financing under the Export Credits Insurance Act	369,387	332,966
Totals, Indirect Debt[1]	**8,335,880**	**8,971,183**
Totals, Direct and Indirect Debt (less Investments Held for Retirement of Unmatured Bonded Debt)	**40,902,982**	**44,393,021**
ct debt per capita[2]	$ 1,570	1,682
ect debt per capita[2]	$ 402	427

[1] Excludes deposits maintained by chartered banks in the Bank of Canada and notes issued by the Canadian oration for the 1967 World Exhibition. [2] Based on estimated population of June 1, 1968 and 1969, respecy.

7.—Gross Bonded Debt of the Federal Government, Average Interest Rate, Term of Issue, and Place of Payment as at Mar. 31, 1968-70

Item		1968	1969	1970
Bonded debt	$'000	18,099,875	19,260,958	19,742,140
Average interest rate	p.c.	4.89	5.32	..
Average term of issue	yrs.	13.37	11.11	..
Place of Payment—				
Canada	$'000	17,939,521	18,818,549	19,295,185
New York	"	160,354	266,733	265,003
Germany	"	...	67,568	73,844
Italy	"	...	108,108	108,108

Subsection 2.—Public Accounts Statistics of Federal Government Finance

The figures of Tables **8** and **10**, giving details of revenue and of assets and liabilities respectively, of the Federal Government for the fiscal years ended Mar. 31, 1968-70, and the figures of Table **9**, giving details of Federal Government expenditure for the years ended Mar. 31, 1968-70, are taken from the *Canada Gazette*.

8.—Revenue of the Federal Government, Years Ended Mar. 31, 1968-70

Revenue	1968	1969	1970
	$	$	$
Tax Revenue—			
Customs import duties (net)	746,437,351	761,681,095	818,282,786
Excise duties	488,554,309	509,287,828	518,844,479
Income tax	4,740,635,053	5,592,037,404	6,945,593,206
Personal[1]	*2,849,573,890*[2]	*3,356,430,988*[2]	*4,085,120,802*
Corporation[1]	*1,670,589,109*	*2,030,040,413*	*2,611,961,028*
On certain payments and credits to non-residents	*220,472,054*	*205,566,003*	*248,511,376*
Social development tax	...	63,000,000	476,500,000
Sales tax (net)[1]	1,601,092,631	1,569,840,938	1,716,899,405
Estate tax, including succession duties	102,192,358	112,377,045	100,630,908
Other taxes	337,350,741	378,114,782	378,674,281
Totals, Tax Revenue	8,016,262,443	8,986,339,092	10,955,425,065
Non-tax Revenue—			
Post Office (net)	281,645,632	310,625,169	354,752,869
Return on investments	612,274,956	695,098,892	860,028,750
Bullion and coinage	10,672,046	74,764,059	19,939,895
Other	108,450,827[r]	124,308,582	122,666,134
Totals, Non-tax Revenue	1,013,043,461[r]	1,204,796,702	1,357,387,648
Grand Totals, Revenue	**9,029,305,904**[r]	**10,191,135,794**	**12,312,812,713**

[1] Excludes tax credited to the Old Age Security Fund. [2] Excludes tax credited to Canada Pension Plan

9.—Expenditure of the Federal Government, Years Ended Mar. 31, 1968-70

Item	1968	1969	1970
	$	$	$
fence Expenditures	**1,807,618,868**	**1,814,080,691**	**1,864,376,949**
National Defence	1,751,569,940	1,760,772,328	1,789,489,327
Supply and Services	22,562,881	23,719,368	26,387,557
Technological assistance to Canadian defence industry	33,486,047	29,588,995	48,500,065
n-defence Expenditures	**8,016,461,705**	**8,953,167,946**	**10,066,912,526**
Agriculture	276,467,417	286,880,199	383,833,688
Communications	316,346,823	354,543,124	353,944,314
Consumer and Corporate Affairs	12,871,549	13,752,965	16,697,483
Energy, Mines and Resources	203,369,521	179,691,650	195,739,166
External Affairs	215,748,898	226,116,193	242,225,671
Finance	2,120,917,420	2,420,665,337	2,846,143,933
Fisheries and Forestry	73,797,011	79,045,963	76,866,896
Governor General and Lieutenant-Governors	1,020,657	1,039,210	1,124,040
Indian Affairs and Northern Development	231,436,114	266,992,760	311,434,559
Industry, Trade and Commerce	152,908,033	174,299,772	247,630,069
Justice	15,354,385	16,930,785	19,661,561
Labour	118,030,078	136,598,045	155,519,032
Legislature	18,305,865	18,586,762	22,988,752
Manpower and Immigration	417,867,189	416,115,015	439,510,592
National Defence	28,229	23,437	18,675
National Health and Welfare	1,508,717,453	1,668,740,046	1,957,028,538
National Revenue	115,058,155	119,970,863	144,583,159
Privy Council	11,024,563	9,269,630	11,256,175
Public Works	290,800,422	284,771,301	288,244,033
Regional Development	159,573,686	180,789,864	236,060,698
Secretary of State	365,944,430	522,569,488	553,497,162
Solicitor General	153,459,858	165,938,295	184,084,217
Supply and Services	41,789,930	41,982,173	54,433,004
Transport	535,277,636	508,060,407	510,932,897
Treasury Board	259,531,471	432,215,004	391,095,061
Veterans Affairs	400,814,912	427,579,658	422,359,151
Grand Totals, Expenditures	**9,824,080,573**	**10,767,248,637**	**11,931,289,475**

10.—Statement of Assets and Liabilities of the Government of Canada, as at Mar. 31, 1968-70

Item	1968[r]	1969	1970
	$	$	$
Assets			
rrent Assets—			
Cash	1,260,654,098	884,933,108	1,030,431,060
Departmental working capital advances and revolving funds	186,540,216	188,871,332	200,961,176
Securities held for the securities investment account at amortized cost	44,354,537	44,426,808	97,369,756
Other current assets	39,121,940	52,013,769	43,613,799
Totals, Current Assets	1,530,670,791	1,170,245,017	1,372,375,791
h in blocked currency	2,136,260	1,913,820	4,119
vances to the Exchange Fund Account	2,033,312,000	2,867,000,000	3,220,399,866
king fund and other investments held for retirement of unmatured debt	8,140,398	6,377,372	13,817,571
estment in special United States of America securities—Columbia River Treaty	122,616,661	90,329,161	58,041,661
ada Pension Plan Investment Fund	1,280,788,000	2,022,947,000	2,832,734,000
ns to and investments in Crown corporations	7,935,610,664	8,767,795,299	9,634,530,148
ns to national governments	1,206,083,565	1,269,212,533	1,327,927,779
er Loans and Investments—			
Subscriptions to capital of, and working capital advances and loans to, international organizations	969,646,296	999,123,550	1,029,693,403
Loans to provincial governments	187,748,438	270,328,269	319,649,195
Veterans' Land Act advances (less reserve for conditional benefits)	382,949,442	421,668,258	472,078,796
Miscellaneous	404,812,030	423,220,118	494,818,954
Totals, Other Loans and Investments	1,945,156,206	2,114,340,195	2,316,240,348

10.—Statement of Assets and Liabilities of the Government of Canada, as at Mar. 31, 1968-70—concluded

Item	1968[r]	1969	1970
	$	$	$
Assets—concluded			
Securities held in trust	59,535,445	111,466,005	114,363,16
Deferred Charges—			
Unamortized portions of actuarial deficiencies—			
Canadian forces superannuation account	187,617,200	242,691,200	254,805,60
Public service superannuation account	150,319,800	186,486,400	283,708,40
Royal Canadian Mounted Police superannuation account	15,816,000	20,720,200	29,282,80
Unamortized loan flotation costs	138,201,555	163,458,374	182,798,79
Totals, Deferred Charges	491,954,555	613,356,174	750,595,59
Capital assets	1	1	
Inactive loans and investments	94,824,381	94,824,381	94,824,38
Total Recorded Assets	16,710,828,927	19,129,806,958	21,735,854,42
Less: Reserve for losses on realization of assets	—546,384,065	—546,384,065	—546,384,06
Net recorded assets	16,164,444,862	18,583,422,893	21,189,470,36
Net debt	16,759,725,147	17,335,837,990	16,960,626,87
	32,924,170,009	35,919,260,883	38,150,097,23
Liabilities			
Current and Demand Liabilities—			
Outstanding treasury cheques	427,400,654	502,541,222	515,879,53
Accounts payable	520,196,369	470,161,879	602,615,25
Non-interest-bearing notes payable on demand	816,729,712	601,008,062	513,465,26
Matured debt outstanding	25,969,247	39,707,891	21,224,21
Interest due and outstanding	161,569,528	162,914,863	161,642,45
Interest accrued	315,282,741	399,433,074	434,022,51
Other current liabilities	43,479,142	43,320,591	58,361,35
Totals, Current and Demand Liabilities	2,310,627,393	2,219,087,582	2,307,210,59
Deposit and trust accounts	440,885,029	511,842,589	491,881,90
Annuity, Insurance and Pension Accounts—			
Government annuities	1,326,098,138	1,324,634,796	1,321,079,75
Canada Pension Plan account	1,352,754,341	2,107,758,449	2,932,257,69
Old Age Security Fund	536,089,248	620,891,563	721,397,68
Canadian forces superannuation account	2,723,268,313	3,023,616,461	3,306,389,32
Public service superannuation account	2,875,823,276	3,178,376,807	3,599,427,50
Miscellaneous	238,934,738	264,784,517	303,952,46
Totals, Annuity, Insurance and Pension Accounts	9,052,968,054	10,520,062,593	12,184,504,44
Undisbursed balances of appropriations to special accounts	124,818,768	235,508,025	273,398,07
Refundable corporation tax	235,268,700	140,806,087	38,148,27
Provision for estimated premium on redemption of bonds	26,041,259	12,421,176	20,301,18
Deferred credits and suspense accounts	153,685,772	178,575,125	197,512,52
Unmatured Debt—			
Bonds—			
Payable in Canada	17,939,520,600	18,818,549,500	19,295,185,00
Payable in New York	160,354,434	266,732,706	265,002,97
Payable in Germany	...	67,567,500	73,844,25
Payable in Italy	...	108,108,000	108,108,00
Treasury Bills and Notes—			
Payable in Canada	2,480,000,000	2,840,000,000	2,895,000,00
Totals, Unmatured Debt	20,579,875,034	22,100,957,706	22,637,140,22
Totals, Liabilities	32,924,170,009	35,919,260,883	38,150,097,23

Guaranteed Debt.—In addition to the direct debt already dealt with, the Gover ment of Canada has assumed certain contingent liabilities. The major categories of t indirect or contingent debt are the guarantee of insured loans under the National Housi Act, the guaranteed bonds and debentures of the Canadian National Railways and t guarantee of deposits maintained by the chartered banks in the Bank of Canada. T

ainder consists chiefly of guarantee of loans made by chartered banks to the Canadian eat Board, to farmers and to university students and of guarantees under the Export dits Insurance Act.

11.—Guaranteed Debt of the Government of Canada, as at Mar. 31, 1969

SOURCE: *Public Accounts of Canada*

Item	Amount of Guarantee Authorized	Amount Outstanding at Mar. 31, 1969[1]
	$	$
way Securities Guaranteed as to Principal and Interest—		
CN 2¾ p.c. bonds due 1969	70,000,000	70,000,000
2½ p.c. bonds due 1971	40,000,000	40,000,000
5½ p.c. bonds due 1971	184,643,500	184,643,500
3¾ p.c. bonds due 1974	200,000,000	200,000,000
2¾ p.c. bonds due 1975[2]	6,486,486	6,486,486
5 p.c. bonds due 1977	81,675,000	81,675,000
4 p.c. bonds due 1981	300,000,000	300,000,000
5¾ p.c. bonds due 1985	95,575,000	95,575,000
5 p.c. bonds due 1987	152,986,000	152,986,000
er Guarantees—		
Deposits maintained by chartered banks in Bank of Canada	Unstated	1,038,024,915
Loans made by lenders under Pt. IV of the National Housing Act, 1954 for home extensions and improvements	25,000,000	21,116,000
Insured loans made by approved lenders under the National Housing Act, 1954	9,500,000,000	6,732,000,000[3]
Insurance and guarantees issued or approved under Sect. 21 and 21A of the Exports Credits Insurance Act	1,100,000,000	332,966,459
Loans made by chartered banks under the Farm Improvement Loans Act	235,000,000	84,605,400
Loans made by chartered banks and credit unions under the Canada Student Loans Act[4]	258,561,600	256,302,000
Loans made by chartered banks and credit unions under the Fisheries Improvement Loans Act	2,700,000	730,700
Loans made by chartered banks under the Small Businesses Loans Act	44,010,600	17,196,500
Notes issued by the Canadian Corporation for the 1967 World Exhibition	56,100,000	56,100,000
Loans made by chartered banks to the Canadian Wheat Board	680,000,000	394,900,000

In addition, the Government has an indeterminate contingent liability in respect of rental guarantee contracts h, in 1968, amounted to approximately $12,596,000. Against this amount was a reserve of $4,658,911 held by the ral Mortgage and Housing Corporation. [2] Expressed in Canadian dollars; payable solely in United States rs and converted on the basis of $1 U.S. = $1.08108 Canadian. [3] As reported (in accordance with Sect. ational Housing Loan Regulations) by approved lenders at Dec. 31, 1968. [4] Includes contingent liability spect of alternate payments to non-participating provinces.

Table **12** summarizes the national debt position during the period 1961-70 as to interest amount outstanding. Details of unmatured debt and treasury bills outstanding and rmation on new security issues of the Federal Government may be found in the *Public ounts of Canada*. They are summarized by standard classification in DBS publication eral Government Finance, Revenue and Expenditure* (Catalogue No. 68-211).

12.—Summary of the Public Debt and Interest Payments Thereon, Years Ended Mar. 31, 1961-70

ar ed r. —	Gross Debt	Net Active Assets	Net Debt	Net Debt per Capita[1]	Increase or Decrease in Net Debt during Year	Interest Paid on Debt	Interest Paid per Capita[2]
	$	$	$	$	$	$	$
...	21,602,836,960	9,165,721,865	12,437,115,095	681.93	347,921,092	756,664,228	42.34
...	22,907,814,464	9,679,677,419	13,228,137,045	712.34	791,021,950	802,919,207	44.02
...	24,799,279,690	10,879,509,718	13,919,769,972	736.65	691,632,927	881,598,898	47.47
...	25,923,732,116	10,853,582,664	15,070,149,452	783.39	1,150,379,480	954,543,790	50.52
...	26,573,425,709	11,068,953,165	15,504,472,544	792.22	434,323,092	1,012,097,143	52.62
...	27,482,940,350	11,939,492,485	15,543,447,865	780.33	38,975,321	1,077,295,513	55.05
...	30,340,137,314	14,375,186,836	15,964,950,478	782.40	421,502,613	1,156,105,268	57.76
...	32,924,170,009	16,164,444,862	16,759,725,147	807.93	794,774,669	1,269,966,267	62.23
...	35,919,260,883	18,583,422,893	17,335,837,990	823.13	576,112,843	1,442,514,496	69.54
...	38,150,097,231	21,189,470,361	16,960,626,870	793.41	−375,211,120	1,676,911,000	79.62

[1] Based on the official estimates of population for June 1 of the year indicated. [2] Based on the official ates of population for June 1 of the year immediately preceding the one indicated.

Subsection 3.—Revenue from Taxation

The incidence of Federal Government taxation is dealt with at pp. 1127-1135. Th Subsection includes statistical data on revenue received from individual income tax, co poration tax, estate tax, excise duties and excise taxes; customs receipts constitute a sing item in the *Public Accounts of Canada* and are not included here.

Individual and Corporation Income Tax

Statistics of income tax collections are gathered at the time the payments are mac and are therefore up to date. Over 85 p.c. of individual taxpayers are wage or sala earners who have almost the whole of their tax liability deducted at the source by the employers. All other taxpayers are required to pay most of their estimated tax duri the taxation year. Thus, the greater part of the tax is collected during the same ye in which the related income is earned and only a limited residue remains to be collected wh the returns are filed. The collections for a given fiscal year include employer remittances tax deductions and Canada Pension Plan contributions and instalments for twelve month embracing portions of two taxation years, and a mixture of year-end payments for the fi of these years and for the preceding year; they cannot therefore be closely related to t statistics for a given taxation year. As little information about a taxpayer is received wh the payment is made and as a single cheque from one employer may frequently cover t tax payment of hundreds of employees, the payments cannot be statistically related taxpayers by occupation or income. Descriptive classifications of taxpayers are availab only from tax returns but collection statistics, if interpreted with the current tax structu and the above factors in mind, indicate the trend of income in advance of the final compil tion of statistics.

The statistics given in Table 13 pertain to revenue collections by the Department National Revenue, Taxation. The collections are for fiscal years ended Mar. 31.

13.—Revenue Collected by the Department of National Revenue, Taxation, Years Ended Mar. 31, 1961-70

NOTE.—All collection figures in this table are net of refunds.

Year Ended Mar. 31—	Income Tax[1]				Estate Tax	Total Collection
	Individual[2]	Corporation	Special Refundable Tax	Total		
	$'000	$'000	$'000	$'000	$'000	$'000
1961	2,028,734	1,380,128	...	3,408,862	84,879	3,493,741
1962	2,200,573	1,303,503	...	3,504,076	84,579	3,588,655
1963	2,399,882	1,362,656	...	3,762,538	87,143	3,849,681
1964	2,579,084	1,472,175	...	4,051,259	90,671	4,141,930
1965	3,047,590	1,804,507	...	4,852,097	88,626	4,940,723
1966	3,336,658	1,891,085	...	5,227,743	108,352	5,336,095
1967	4,538,597	1,874,903	196,157	6,609,657	101,106	6,710,763
1968	5,471,589	1,987,547	39,111	7,498,247	102,192	7,600,439
1969	6,323,872	2,416,851	−94,462	8,646,261	112,377	8,758,638
1970	7,910,444	3,080,001	−102,658	10,887,787	100,631	10,988,418

[1] Includes old age security tax and, from 1962, provincial income tax collected by the Department of Natio Revenue, Taxation. [2] Includes non-resident withholding tax. From 1966, includes Canada Pension Pl contributions by employers, employees and self-employed persons; for 1969 and 1970, includes social developme tax.

Income Tax Statistics.—Individual income tax statistics are presented in Tables to **16** on a calendar-year basis and are compiled from a sample of all returns received. xpayers and amounts of income and tax are shown for selected cities and by occupation d income classes. Table **17** gives statistics of corporation income tax by industry group size of assets.

—Number of Taxpayers and Amounts of Income and Tax, by Selected Cities, 1967 and 1968

City and Province	1967			1968		
	Taxpayers	Total Income Assessed	Tax Payable[1]	Taxpayers	Total Income Assessed	Tax Payable[1]
	No.	$'000,000	$'000,000	No.	$'000,000	$'000,000
ntford, Ont.	28,311	152.8	20.1	28,122	155.6	21.5
gary, Alta.	137,303	795.6	109.4	146,386	894.6	133.4
tmouth, N.S.	19,190	98.1	11.1	20,008	106.3	13.4
monton, Alta.	164,408	903.2	118.8	174,349	1,024.5	147.7
nder Bay, Ont.	40,908	224.9	28.2	41,050	238.0	32.0
lph, Ont.	23,647	126.1	16.1	24,617	140.3	19.7
ifax, N.S.	50,840	269.7	34.2	53,137	295.6	40.5
milton, Ont.	174,997	1,018.8	137.3	183,844	1,155.7	169.3
l, Que.	37,599	188.3	13.0	39,866	220.3	16.4
gston, Ont.	30,308	164.1	21.5	32,172	188.9	27.6
chener–Waterloo, Ont.	70,281	382.9	50.8	75,000	433.5	62.1
don, Ont.	89,422	499.5	67.6	93,439	555.7	81.7
cton, N.B.	21,960	107.5	11.7	21,933	112.0	13.4
treal, Que.	803,870	4,592.4	361.0	823,563	4,972.6	426.0
v Westminster, B.C.	48,640	275.3	35.0	48,378	288.2	39.0
gara Falls, Ont.	23,962	131.8	16.1	25,162	145.1	19.2
ville, Ont.	19,084	132.2	20.4	20,944	152.9	25.6
awa, Ont.	36,227	211.3	28.6	35,386	231.7	34.5
awa, Ont.	157,291	949.6	134.0	166,444	1,066.2	163.8
rborough, Ont.	23,162	129.5	16.5	24,760	146.1	20.0
bec, Que.	120,932	654.1	47.3	127,878	737.7	58.7
ina, Sask.	53,568	284.6	38.0	55,170	307.1	43.4
Catharines, Ont.	44,378	262.2	34.6	46,211	288.1	41.2
t John, N.B.	31,240	149.8	16.8	32,374	161.9	19.5
John's, Nfld.	31,605	155.1	19.1	33,669	178.9	23.8
ia, Ont.	26,811	173.5	24.4	28,153	195.9	30.3
katoon, Sask.	46,732	254.4	34.1	49,174	280.9	40.3
t Ste Marie, Ont.	26,562	153.7	20.0	28,571	173.7	24.2
rbrooke, Que.	27,973	139.0	9.1	29,791	157.5	11.7
bury–Copper Cliff, Ont.	46,635	291.0	39.2	48,042	320.5	48.0
ney–Glace Bay, N.S.	29,396	140.6	13.7	30,276	148.5	15.6
onto, Ont.	920,466	5,392.0	795.7	956,600	6,046.8	979.2
s-Rivières, Que.	19,542	102.5	6.8	21,773	114.9	8.3
couver, B.C.	317,062	1,868.8	265.3	335,285	2,093.8	319.5
oria, B.C.	69,955	382.8	47.9	74,949	428.8	58.2
dsor, Ont.	80,335	488.8	64.4	85,328	559.2	81.1
nipeg, Man.	204,184	1,071.6	142.2	214,341	1,184.0	168.4

[1] Includes old age security tax and provincial income tax for all provinces except Quebec.

15.—Number of Taxpayers and Amounts of Income and Tax, by Occupational Class, 1967 and 1968

Occupational Class	1967			1968		
	Taxpayers	Total Income Assessed	Tax Payable[1]	Taxpayers	Total Income Assessed	Tax Payable[1]
	No.	$'000	$'000	No.	$'000	$'000
Employees	5,788,100	30,677,159	3,409,558	6,015,172	34,078,474	4,152,75
Farmers	148,725	822,398	92,732	142,041	747,082	80,88
Fishermen	8,732	41,876	4,200	9,460	50,056	5,66
Self-employed Professionals—						
Accountants	5,125	74,399	14,933	4,699	79,892	17,71
Medical doctors and surgeons	16,509	451,469	120,920	17,688	516,151	149,88
Dentists	5,108	93,338	21,493	5,184	104,529	26,20
Lawyers and notaries	8,462	186,282	47,584	8,709	205,508	56,82
Consulting engineers and architects	2,572	56,869	13,758	2,409	54,701	13,83
Entertainers and artists	5,720	35,602	4,670	5,049	30,731	4,23
Other professionals	11,246	86,278	13,903	12,001	101,254	18,25
Salesmen	18,556	131,036	16,695	19,618	143,099	19,58
Business proprietors	255,103	1,599,194	194,248	263,512	1,697,372	221,31
Investors	158,552	1,085,164	149,853	192,088	1,251,451	182,45
Property owners	51,799	309,973	41,087	57,226	354,211	50,78
Pensioners	161,267	549,926	40,424	202,419	709,419	57,03
All others	10,107	40,898	4,410	9,639	37,540	4,52
Totals	**6,655,683**	**36,241,861**	**4,190,467**	**6,966,914**	**40,161,472**	**5,061,94**

[1] Includes old age security tax and provincial income tax for all provinces except Quebec.

16.—Individual Income Tax Statistics, by Income Class, 1967 and 1968

Income Class Based on Total Income	Taxpayers		Total Income Assessed		Tax Payable[1]		Average Tax[1]	
	1967	1968	1967	1968	1967	1968	1967	1968
	No.	No.	$'000	$'000	$'000	$'000	$	$
Under $1,000	44,230	48,490	23,070	23,855	1,601	2,243	36	4
$ 1,000 and under $ 2,000	701,183	700,406	1,100,884	1,099,065	33,043	32,694	47	4
$ 2,000 " $ 3,000	920,507	881,808	2,315,286	2,214,207	130,301	123,524	142	14
$ 3,000 " $ 5,000	2,003,933	1,929,723	7,976,542	7,663,440	628,559	632,625	314	32
$ 5,000 " $10,000	2,490,063	2,778,210	16,822,801	19,130,819	1,854,841	2,255,089	745	81
$10,000 " $25,000	447,690	570,866	6,052,154	7,672,937	987,460	1,303,780	2,206	2,28
$25,000 " $50,000	39,689	46,835	1,308,119	1,548,658	338,386	420,247	8,526	8,97
$50,000 or over	8,388	10,576	643,006	808,490	216,276	291,742	25,784	27,58
Totals	**6,655,683**	**6,966,914**	**36,241,861**	**40,161,472**	**4,190,467**	**5,061,944**	**630**	**72**

[1] Includes old age security tax and provincial income tax for all provinces except Quebec.

Succession Duties and Estate Taxes

From Jan. 1, 1947 to Mar. 31, 1963, only Ontario and Quebec levied succession duties the other provinces having leased this field to the Federal Government under the terms of the federal-provincial tax agreements (see p. 1126). However, British Columbia re-entered the field, effective for all deaths occurring on or after Apr. 1, 1963. The incidence of the estate tax is discussed at pp. 1132-1133. Federal revenue from succession duties and estate taxes in the year ended Mar. 31, 1970 amounted to $100,630,908. In the same year, provincial revenues from succession duties in Quebec, Ontario and British Columbia were estimated at $42,000,000, $67,000,000 and $17,000,000, respectively.

Excise Taxes

Excise taxes collected by the Excise Division of the Department of National Revenue are given for the years ended Mar. 31, 1968-70 in Table **18.**

17.—Corporation Net Taxable Income, by Industry Group and by Size of Total Assets, 1966-68

(Millions of dollars)

Year and Asset Size	Agriculture, Forestry, Fishing	Mining, Quarrying, Oil Wells	Manufacturing	Construction	Utilities	Wholesale Trade	Retail Trade	Finance, Insurance, Real Estate	Services	Total
1966[r]										
Under 100,000	6.1	2.5	30.0	36.6	15.1	37.6	56.6	51.9	52.1	288.5
100,000 to 249,999	9.2	3.0	56.8	40.0	15.7	58.4	66.9	55.7	41.3	347.0
250,000 to 999,999	8.8	7.8	155.5	54.3	26.2	136.8	64.3	72.7	50.6	577.0
1,000,000 to 4,999,999	5.5	18.0	358.9	42.7	55.1	123.7	38.9	69.3	42.2	754.3
5,000,000 and over	5.4	122.8	1,508.4	28.9	488.0	148.8	154.7	426.0	24.5	2,907.5
Totals, Taxable Income	**35.0**	**154.1**	**2,109.6**	**202.5**	**600.1**	**505.3**	**381.4**	**675.6**	**210.7**	**4,874.3**
1967										
Under 100,000	6.1	2.9	29.4	38.4	15.0	38.6	64.1	56.7	55.6	306.8
100,000 to 249,999	10.5	2.9	56.5	49.8	15.5	63.4	68.6	61.5	48.2	376.9
250,000 to 999,999	11.1	6.9	161.8	63.7	27.7	131.4	58.6	82.4	60.6	604.2
1,000,000 to 4,999,999	3.3	18.7	396.6	60.3	56.3	146.0	64.6	73.3	49.8	868.9
5,000,000 and over	4.0	210.5	1,367.8	51.3	411.5	152.5	170.4	461.5	30.4	2,859.9
Totals, Taxable Income	**35.0**	**241.9**	**2,012.1**	**263.5**	**526.0**	**531.9**	**426.3**	**735.4**	**244.6**	**5,016.7**
1968										
Under 100,000	6.5	4.4	28.7	42.5	14.3	41.2	67.6	61.3	59.9	326.4
100,000 to 249,999	11.5	2.8	56.1	53.2	17.0	66.0	77.4	71.4	54.8	410.2
250,000 to 999,999	14.2	8.2	181.2	68.7	29.0	143.9	65.9	100.9	67.1	679.1
1,000,000 to 4,999,999	3.7	13.6	411.6	58.4	54.7	159.3	48.5	77.5	47.2	874.5
5,000,000 and over	11.5	204.6	1,886.0	81.3	419.8	193.6	209.5	538.3	50.3	3,594.9
Totals, Taxable Income	**47.4**	**233.6**	**2,563.6**	**304.1**	**534.8**	**604.0**	**468.9**	**849.4**	**279.3**	**5,885.1**

18.—Excise Taxes Collected, by Commodity, Years Ended Mar. 31, 1968-70

Commodity	1968	1969	1970
	$	$	$
Sales tax[1]	1,601,092,631	1,569,840,938	1,716,899,4
Other Excise Taxes—			
Cigarettes, tobacco and cigars	266,686,510	304,176,479	295,845,2
Jewellery, watches, ornaments, etc.	10,154,970	9,462,220	10,393,6
Matches and lighters	1,190,513	1,106,976	1,093,2
Television sets, radios, tubes and phonographs	32,581,259	35,346,292	40,763,8
Toilet preparations	17,934,068	18,551,776	19,755,1
Wines	5,327,282	5,859,702	6,990,5
Sundry commodities	1,552,454	1,680,479	2,560,0
Interest and penalties	2,183,542	2,414,016	2,176,2
Less refunds and drawbacks	−562,439	−733,047	−1,154,5
Totals	**1,938,140,790**	**1,947,705,831**	**2,095,322,9**

[1] Net after deduction of refunds and drawbacks; excludes tax credited to the old age security fund.

Excise Duties

Gross excise duties collected are given in the following statement for the years en Mar. 31, 1968-70. The totals do not agree with net excise duties as shown in Tabl because refunds and drawbacks are included. A drawback of 99 p.c. of the duty n be granted when domestic spirits, testing not less than 50 p.c. over proof, are delivered limited quantities for medicinal or research purposes to universities, scientific or resea laboratories, public hospitals, or health institutions in receipt of federal and provin government aid.

Item	*1968*	*1969*	*1970*
	$	$	$
Spirits	180,440,536	185,367,682	194,732,949
Beer or malt liquor	120,199,949	134,970,315	139,353,060
Tobacco, cigarettes and cigars	194,580,907	196,646,182	193,840,437
Licences	31,001	32,693	32,085
Totals	495,252,393	517,016,872	527,958,531

Section 4.—Federal-Provincial Conditional Grants and Shared-Cost Programs*

During the year ended Mar. 31, 1969, federal expenditures on joint federal-provin programs, which had increased rapidly over the previous decade, began to slow do These programs take three forms: (1) the Federal Government contributes financial sistance to a program administered by a province; (2) the federal and provincial gove ments each assumes the sole responsibility for the construction, administration and financ of separate aspects of a joint project; or (3) the province contributes financially to a jc program administered by the Federal Government.

* As at January 1970. Prepared in the Federal-Provincial Relations Division, Department of Finance, Ott

Additional Readings:—

Donald V. Smiley, *Conditional Grants and Canadian Federalism* (Canadian Tax Papers No. 32), Toronto, Cana Tax Foundation, February 1963. Federal-Provincial Relations Division, Department of Finance, *Fed Provincial Conditional Grant and Shared-Cost Programmes 1962*, Ottawa, Queen's Printer, October 1963, $3 (C logue No. F2-2563). Appendix to House of Commons Debates of Sept. 10, 1964. Statutes of Canada 1964-65, c

The first category of joint programs is by far the most common and such programs re commonly called conditional grant programs. They are characterized by the Federal overnment agreeing to make money available to a province on certain conditions, such onditions always specifying the field, service or project to which the money must be pplied. In addition to being entrusted with the administration of programs, the provinces ay be required to make financial contributions to such programs, to provide certain facili-ies, and to meet certain specified standards in operating them. The various programs in he field of social policy are good examples of conditional grant programs. Under the ospital insurance program, for instance, the Federal Government undertakes to contribute o participating provinces a specified share of the costs incurred by the provinces in respect f public hospital insurance programs. The federal contribution in each province is equal o 25 p.c. of the average per capita cost of in-patient services in Canada as a whole plus 25 .c. of the average per capita cost of in-patient services in the province multiplied by the verage for the year of the number of insured persons in the province.

Although the hospital insurance program, with its specifications of eligible hospitals, harable costs and the amount of the federal contribution, is characteristic of many condi-onal grant programs, there are others in which the conditions are nominal. For example, nder the Canada Assistance Plan the Federal Government undertakes to share one half f the cost of welfare paid to recipients in need, the scale and conditions of the assistance o be determined by the provinces. In general, it may be said that the hospital insurance rogram conforms to the traditional pattern of conditional grants, whereas the Canada ssistance Plan marks an approach in which flexibility and adaptability to local circum-tances is allowed to modify insistence on a national uniform standard.

Joint programs in the second category—those in which the federal and provincial overnments accept sole responsibility for portions of a total project—are not numerous nd are generally of a public works type. The irrigation projects carried out jointly by he Prairie Farm Rehabilitation Administration and the Province of Alberta on the St. Iary's and Bow Rivers in southern Alberta were of this nature. In the St. Mary's irriga-on project, the Federal Government undertook the responsibility for the construction f all main reservoirs, large dams and connecting works, and Alberta assumed responsibility or the construction of the distribution system and the development and colonization of he new irrigable areas.

Joint programs in the third category are also few in number and the sums of money nvolved are seldom large. The South Saskatchewan River dam was an example; Canada ndertook to pay the costs of the dam in the first instance, with Saskatchewan subsequently eimbursing Canada for one quarter of the federal expenditures (up to a maximum of 25,000,000) on the dam and reservoir. By Mar. 31, 1968, the full amount had been re-overed from Saskatchewan.

The federal transfers to the provinces in respect of the conditional grant and shared-ost programs increased from $75,000,000 in the year ended Mar. 31, 1954, to an estimated 1,626,000,000 in 1968-69. The increase was attributable largely to the introduction of he hospital insurance and diagnostic services program in 1958, medicare in 1968, increases the level of assistance, and the integration of welfare programs under the Canada As-stance Plan. In 1968-69, federal contributions to the programs in respect of hospital nd diagnostic services and welfare programs integrated with and into the Canada As-stance Plan were estimated at $798,125,000 and $446,902,000, respectively.

The increasing number and extent of conditional grant and shared-cost programs has ccasioned some provincial criticisms and misgivings. It has been argued that the pre-onderant occupancy of the direct tax field in the postwar years by the Federal Government ncouraged the growth of such programs, as the provinces were denied the revenues that ould have enabled them to provide equivalent programs themselves. At the 1964 ederal-Provincial Conference, the Province of Quebec proposed that a province be given he option to assume full administrative and financial responsibility for certain joint

programs upon the Federal Government making available to that province the necessa additional tax room. These proposals were referred to a federal-provincial committee officials for consideration. As a consequence of their consideration, the Prime Minis of Canada, in a letter to the provincial Premiers dated Aug. 15, 1964, proposed a tempora measure permitting a province for an interim period to assume full financial and administ tive responsibility in respect of certain programs pending the development of more perm nent arrangements. Parliament approved the necessary legislation—the Establish Programs (Interim Arrangements) Act—in April 1965. Under the Act, the Governme of Canada was authorized to enter into agreements with any province that wished assume full financial and administrative responsibility for certain programs in return f fiscal compensation. The nature and number of programs were itemized in the schedu to the Act.

Schedule I listed the major conditional grant programs of a continuing nature a Schedule II listed smaller and more transient programs. The Schedule I programs we (1) hospital insurance; (2) old age assistance, blind persons' allowances, disabled perso allowances, and the welfare portion of unemployment assistance; (3) the technical a vocational training programs for youths who were not yet members of the labour for and (4) the health grant program, except those elements that involved research and de onstration. The Schedule II programs were: (1) agricultural lime assistance; (2) t forestry programs; (3) hospital construction grants; (4) campgrounds and picnic are and (5) the roads to resources program. The Act was subsequently amended to inclu the Canada Assistance Plan.

If a province wished to avail itself of the provisions of the Established Progra (Interim Arrangements) Act in respect of a Schedule I program, it had to enter into supplemental agreement in which it undertook to assume full responsibility for the admi stration and financing of the program. The Federal Government undertook to ensu that the province received revenue equivalent to the fiscal burden it assumed. T Federal Government undertook to: (a) abate by a specified percentage the individu income tax on the income of residents of the province; (b) pay associated equalization; a (c) make an operating cost adjustment. The operating cost adjustment payment recovery was to ensure that a province did not suffer or benefit financially through assumi the financing of the federal share of the former joint program. Because of their small size and lack of continuity, the compensation associated with a Schedule II program d not provide for federal tax abatement or associated equalization payments. The compe sation for these programs was to be paid directly to the province by the federal Minister Finance.

The freedom of a province to vary the nature and condition of a program enumerat in the Established Programs (Interim Arrangements) Act differed between the Schedule and Schedule II programs. Under the Act, a supplemental agreement with respect to Schedule I program could vary the conditions of the original agreement only as to t manner in which Canada would contribute to the program and the manner in which a counts were submitted. A supplemental agreement for a Schedule II program mig require the program to be continued as in the original authority or it might allow a provin to substitute a provincial program having substantially similar objectives.

The Established Programs (Interim Arrangements) Act was designed to provide for a interim period during which a province might assume greater administrative and financi responsibility for the enumerated programs and during which time more permanent arrang ments governing joint programs might be devised. The length of the interim period w set out in the Act for each program and varied from Mar. 31, 1967 to Dec. 31, 1970. T tax abatement associated with Schedule I programs was also set out in the Act and vari from 1 p.c. for the health grant program to 14 p.c. for hospital insurance.

The Province of Quebec alone availed itself of the provisions of the above legislatio At the federal-provincial meetings in September and October 1966, the Federal Gover

18. Conditional Grants and Shared-Cost Programs as at January 1970

Department and Project	Year Established	Basis of Provincial Apportionment of Federal Funds	Provinces Participating[1]	Provincial Share[2]	Maximum Limitation on Grant[3]	Federal Contribution 1968–69[4]
				p.c.		$'000
Agriculture—						
Freight assistance on livestock shipments to Royal Winter Fair	1946	Extent of provincial programs	9 (Ont.)	25	O	20
4-H Club activities	1900	Extent of provincial programs	9 (N.S.)	50	O	214
Crop Insurance	1961	Extent of provincial programs	8 (Nfld., N.B.)	0–50 of admin. costs	O	4,851
Compensation—rabies control	1959	Incidence of disease	8 (Nfld., P.E.I.)	60	O	56
Barberry eradication	1964	Extent of provincial programs	Que., Ont.	50	O	58
Grants to special fairs	1957	Flat grant	Nfld., N.B.	5	F	35
Central Mortgage and Housing Corporation—						
Urban renewal	1944	Project cost	10	50[5]	O	13,015[6]
Public housing	1949	Project losses	10	25 or 50[5]	O	4,419[6]
Urban redevelopment	1954	Work completed	10	50[5]	O	2,068[6]
Sewage treatment projects	1960	Work completed	10	75[5]	O	6,073[6]
Emergency Measures	1952	Population	10	25–50[5]	F	3,733
Energy, Mines and Resources—						
Water Conservation	1938	Estimated construction costs	Ont.	37½–62½	F	855
Greater Winnipeg Floodway, etc.	1962	Estimated cost	Man.	25–62½	F	1,026
Roads to Resources	1958	Flat grant for province	Nfld., N.B., Sask.	50	F	842
Flood Control	ad hoc	Extent of provincial programs	Ont., B.C.	50	O	803
Finance—						
Canada Student Loans—service fees	1965	Grant per eligibility certificate	9 (Que.)	6	O	307
Fisheries and Forestry—						
Construction subsidy—fishing vessels	1942	Extent of provincial programs	Atlantic, Que.	—	O	1,750
Industrial development	1959	Extent of provincial programs	6 (Man., Sask., Alta., B.C.)	50	O	1,138
Relocation—fishing families	1967	Extent of provincial program	Nfld.	—	O	1,400
Spruce Budworm Eradication	1953	Incidence of infestation	N.B.	33⅓	F	100
Indian Affairs and Northern Development—						
Non-reserve Schools for Indians—						
Capital contribution	ad hoc	Estimated cost	various school districts	ratio white to Indian children	O	—
Instructional contribution	1948	Estimated tuition costs	various school districts	—	O	26,262

For footnotes, see end of table, p. 1161.

19.—Conditional Grants and Shared-Cost Programs as at January 1970—concluded

Department and Project	Year Established	Basis of Provincial Apportionment of Federal Funds	Provinces Participating[1]	Provincial Share[2]	Maximum Limitation on Grant[3]	Federal Contribution 1968–69[4]
				p.c.		$'000
Indian Affairs and Northern Development—concl.						
Welfare services to Indians	1960	Specified in each agreement	Nfld., Ont., Man., Sask., Alta.	0–50	varies	2,491
Manpower and Immigration—						
Agricultural Manpower	1941	Specified in agreement	9 (Nfld.)	50	F	190
Vocational Rehabilitation of Disabled Persons	1953	Extent of provincial programs	9 (Que.)	50	O	3,969
Technical and Vocational Training—						
Technical and vocational training and training research projects	1937–66	Varies	10	varies	varies	3,500
Capital Contribution	1945	Extent of provincial programs	10	25 to $480 per capita +50 to $320 per capita	F	105,949
Municipal Winter Works	1958	Extent of approved municipal programs	10	[7]	O	21,449
National Health and Welfare—						
National Health Grants—						
Hospital Construction	1948	Estimated construction	10	50	F	14,009
Professional Training	1948	Flat grant and population	10	[8]	F	1,330[9]
Mental Health	1948	Flat grant and population	10	[8]	F	6,267[9]
Tuberculosis Control	1948	Flat grant, population and TB deaths	10	[8]	F	1,294[9]
Public Health Research	1948	Based on research needs	10	[8]	F	4,199
Cancer Control	1948	Flat grant and population	9 (Man.)	50	F	1,213[9]
General Public Health	1948	Flat grant and population	10	[10]	F	13,707[9]
Child and Maternal Health	1953	Flat grant, provincial infant birth and death ratio	10	[8]	F	818[9]
Medical Rehabilitation and Crippled Children	1953–48	Flat grant and population	10	50[11]	F	1,017[9]
Health Resources Fund	1966	$300,000,000 on basis of population; $175,000,000 by Federal Government; $25,000,000 agreement of Atlantic Provinces	10	50	F	33,923
Hospital Insurance	1958	Population eligible for hospitalization x(25 p.c. of average national per capita costs + 25 p.c. of average provincial per capita costs)	10	[7]	O	798,125
Medicare	1968	Average number insured x 50 p.c. of average per capita costs of participating provinces	Sask., B.C.	[7]	O	32,966
Old Age Assistance	1952	Needy population (age group 65–66)	10	50	O	6,533
Blind Persons' Allowances	1937	Needy blind population (age group 18–66)	10	25	O	3,531
Disabled Persons' Allowances	1954	Needy disabled population (age group 18–66)	10	50	O	[illegible]

Unemployment Assistance	1955	Needy unemployed	P.E.I., N.S., Que., Ont., Alta.	50	O	78,278
Canada Assistance Plan	1966	Individuals in need	10	50	O	344,373
Fitness and Amateur Sport	1962	Flat grant and population	9 (Que.)	40	F	821
National Welfare Grants—						
Welfare services	1962	Based on need	10	50[5]	F	720
Demonstration projects	—			[8]		
Hospitalization and welfare of indigent immigrants	1947	Estimated cost	N.S., Que., Ont.	50	O	77
National Research Council—						
Technical Information Services	1952	Extent of provincial programs	7 (Nfld., P.E.I., Que.)	[8]	O	348
Public Works—						
Trans-Canada Highway	1950	Provincial mileage and extent of provincial programs	10	10–50	O	37,312
Matane–Gaspé North Highway	1965	Mileage contribution	Que.	9	F	2,435
Portage du Fort Bridge	1966	Estimated cost	Ont., Que.	50	O	26
Okanagan Flood Control	1950	Estimated cost	B.C.	50	O	46
Regional Development—						
Agricultural and Rural Development	1962	Extent of agreed programs	10	50	O	24,486
Fund for Rural Economic Development	1966	Specified in agreement	N.B., Que.	0–40	F	9,471
Shellmouth Dam	1962	Estimated cost	Man.	50	O	684
Coal subvention—electric power	1965	Atlantic coal consumed	N.B., N.S.	—	O	2,178
Secretary of State—						
Immigrants, Language—						
Instruction	1951	Estimated cost	9 (Que.)	50	O	486
Text books	1963	Estimated cost	9 (Que.)	—	O	59
Industry, Trade and Commerce—						
Vital statistics	1909	Estimated cost	9 (P.E.I.)	[8]	O	73
Transport—						
Railway Grade Crossing Fund	1909	Approved construction	10	12½–15[5]	F	2,918
Railway abandonment—highway improvement	1965	Half of capitalized value of savings	N.B.	9	F	225
Trunk highways	1965	Ratio 3:3:3:1	Atlantic	25–50	O	16,934
Municipal Airports	1927					
Operational subsidy	—	Related to airport operational deficit	10	—	O	—
Capital	—	Approved capital projects	10	50[5]	F	46

[1] Provinces excepted are shown in parentheses. [2] As here used, 50 p.c. may mean the province must contribute 50 p.c. of the cost of the project or must match the federal contribution. [3] F=a maximum limit set to the federal share; P=a maximum limit to the provincial share; and O=federal and provincial shares are open-ended. [4] SOURCE: *Public Accounts of Canada, 1969.* [5] Represents the provincial and/or municipal share. [6] Includes payments to municipalities. [7] Not uniform. [8] Provinces to provide administration, services, facilities, land, loans or to undertake a specific portion of the project, etc. [9] Quebec under the Established Programs (Interim Arrangements) Act received $8,584,000 for these programs. [10] Provinces to maintain existing level of expenditures or to bear residuary costs. [11] Share for provision of services only.

ment offered the provinces revised and more permanent arrangements. The Fede Government proposed to abate, for the period 1967-70, 17 p.c. of the personal income t in those provinces that would take over the financial responsibility for the hospital ins ance, welfare (i.e., Canada Assistance Plan) and health grant programs. To ensure fis equity, equalization and operating cost adjustment payments were to be associated w the abatement. As the technical and vocational program was being discontinued in existing form, the offer did not apply to that program. These proposals were re-offe again at the Nov. 4-5, 1968 meeting of the Ministers of Finance and Provincial Treasure Until the future responsibility for the joint programs, hospital insurance, Canada welfa and health grants is finally agreed upon, the contracting-out arrangement in the Establish Programs (Interim Arrangements) Act has been extended by the annual Estimates.

Section 5.—Provincial Government Finance

Provincial government accounting and reporting practices vary considerably so th certain adjustments to the *Public Accounts* figures are required in order to produce co parable statistics. For example, transactions relating to a specific function are sometim excluded from ordinary accounts; therefore special or administrative funds of this natu have been added to provincial ordinary account in the tables of this Section. The fis years of all provinces end on Mar. 31.

Revenue and Expenditure.—Table **20** shows net general revenue of and cost services provided by provincial governments for years ended Mar. 31, 1966-68. Table gives details of net general revenue, which is the total revenue received from all sour with the exception of enterprises and utilities adjusted where necessary to a comparati basis for all provinces, less (*a*) all revenue of provincial government institutions, (*b*) reven in the form of interest, premium, discount and exchange, (*c*) grants-in-aid and shared-c contributions. Table **22** reflects the "cost of services provided" by provincial governme and their agencies even though these costs may be shared by other levels of governme through conditional grants. Transfers from federal or municipal governments are n deducted from gross provincial expenditures. Table **23** gives details of the amou transferred to other governments by provincial governments, according to nature of pa ment.

20.—Net General Revenue of and Cost of Services Provided by Provincial Governmen Years Ended Mar. 31, 1966-68

Province or Territory	Net General Revenue			Cost of Services Provided		
	1966	1967	1968	1966	1967	1968
	$'000	$'000	$'000	$'000	$'000	$'000
Newfoundland	111,985	125,423	164,670	181,940	270,444	301,03
Prince Edward Island	24,522	26,882	33,066	38,287	47,581	50,75
Nova Scotia	150,405	165,834	209,954	197,859	255,267	308,08
New Brunswick	128,321	151,537	211,658	175,292	216,296	315,08
Quebec	1,599,506	1,817,003	2,287,998	1,986,165	2,279,532	2,640,43
Ontario	1,602,995	1,968,094	2,295,682	1,905,538	2,323,160	2,891,46
Manitoba	198,787	221,948	291,670	266,893	319,073	364,90
Saskatchewan	266,433	291,319	311,380	298,271	356,869	386,27
Alberta	453,309	465,476	497,383	465,348	655,054	728,28
British Columbia	554,144	630,647	690,895	640,205	697,106	788,26
Yukon Territory	5,008	5,769	7,723	7,027	8,292	12,01
Northwest Territories	5,196	6,184	8,768	8,409	11,621	14,14
Canada	**5,100,611**	**5,876,116**	**7,010,847**	**6,171,234**	**7,440,295**	**8,800,75**

24.—Details of Net General Revenue of Provincial Governments, Year Ended Mar. 31, 1968

Source	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Taxes—													
Income—													
Corporations[1]	5,500	951	9,924	7,531	153,732	276,577	22,259	15,581	39,932	64,033	—	—	596,020
Individuals[2]	11,763	2,403	25,875	18,579	527,574	551,004	53,728	48,587	79,792	142,852	—	—	1,461,957
On premiums of insurance companies	556	166	1,437	1,146	18,112	24,973	1,929	1,346	3,603	4,953	—	—	58,221
Other, on corporations	—	—	—	—	27,704	723	—	—	—	—	—	—	28,427
Property	—	—	104	22,093	—	1,762	—	264	—	10,097	330	56	34,706
Sales—													
Alcoholic beverages	[3]	707	[3]	[3]	—	—	—	[3]	—	[3]	130	—	837
Amusements and admissions	75	107	630	416	13,462	25,334	1,653	158	1,452	2,544	15	—	45,846
Motor fuel	14,043	4,087	28,641	24,235	217,717	307,134	40,757	36,486	50,730	66,271	769	1,053	791,923
Tobacco	1,966	442	[3]	2,565	38,767	19,465	8,286	4,142	—	[3]	—	—	75,633
General	29,089	4,140	25,805	32,598	465,944	442,417	40,052	52,374	—	167,207	—	—	1,259,626
Other commodities and services	28	—	640	—	52,631	—	3,901	—	—	2,736	—	—	59,936
Succession duties	—	—	2[4]	—	35,883	59,638	—	—	1[4]	13,763	—	—	109,287
Hospital insurance premiums[5]	—	—	[3]	—	—	182,770	13,122	18,425	—	11,266	—	—	225,583
Other	430	—	55	113	2,768	16,574	2,165	1,393	1,996	342	3	—	25,839
Totals, Taxes	63,450	13,003	93,113	109,076	1,554,294	1,908,371	187,852	178,756	177,506	486,064	1,247	1,109	4,773,841
Privileges, Licences and Permits—													
Liquor control and regulation	4,993	23	226	366	24,006	33,446	3,318	193	1,512	794	12	71	68,960
Motor vehicles	4,151	1,034	7,382	7,294	119,304	110,386	14,486	10,810	20,075	29,897	275	123	325,217
Natural resources	3,770	34	1,471	6,083	72,315	49,245	5,592	41,391	230,079	93,332	41	48	503,401
Other	788	90	602	1,132	15,533	9,526	703	1,605	2,495	3,818	438	41	36,771
Totals, Privileges, Licences and Permits	13,702	1,181	9,681	14,875	231,158	202,603	24,099	53,999	254,161	127,841	766	283	934,349
Sales and services	4,511	2,863	7,188	3,849	20,661	43,188	9,473	13,819	16,636	27,889	280	196	150,553
Fines and penalties	756	91	502	791	3,972	5,411	973	1,426	2,146	1,686	39	42	17,835
Interest, discount, premium and foreign exchange	555	1,324	12,296	2,732	8,949	91,724	12,741	39,481	26,262	7,258	117	90	203,529
Net income from sales of alcoholic beverages by Provincial Liquor Commissions	5,539	2,309	16,878	12,823	74,153	116,789	20,093	23,934	37,847	49,952	1,130	1,636	363,083
Other revenue of government enterprises	—	—	—	—	—	—	—	9,050	—	—	—	—	9,050
Other revenue	273	14	1	359	4,538	847	356	310	441	153	385	8	7,685
Totals, Gross Revenue from Own Sources	88,786	20,785	139,659	144,505	1,897,725	2,368,933	255,587	320,775	514,999	700,843	3,964	3,364	6,459,925

For footnotes, see end of table, p. 1164.

21.—Details of Net General Revenue of Provincial Governments, Year Ended Mar. 31, 1968—concluded

Source	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Conditional Transfers—													
From Federal Government	63,976	12,675	83,762	64,918	187,927	496,599	83,051	79,362	120,133	125,980	2,430	3,472	1,324,285
From municipal governments	10	2	782	—	4,008	4,124	2,483	1,000	10,863	—	—	—	23,272
Totals, Conditional Transfers	63,986	12,677	84,544	64,918	191,935	500,723	85,534	80,362	130,996	125,980	2,430	3,472	1,347,557
Unconditional Transfers—													
From Federal Government—													
Statutory subsidies	9,656	657	2,132	1,745	3,964	4,624	2,127	2,155	2,955	1,672	—	—	31,687
Federal-provincial fiscal arrangements	68,876	14,314	82,419	68,396	397,158	20,628	47,408	29,583	8,364	—	3,876	5,494	746,516
Share of income tax on power utilities	375	66	634	34	673	1,576	276	11	2,886	169	—	—	6,700
Grants in lieu of taxes on federal property	—	—	—	750	—	—	—	—	—	400	—	—	1,150
Totals, Unconditional Transfers	78,907	15,037	85,185	70,925	401,795	26,828	49,811	31,749	14,205	2,241	3,876	5,494	786,053
Totals, Gross General Revenue	**231,679**	**48,499**	**309,388**	**280,348**	**2,491,455**	**2,896,484**	**390,932**	**432,886**	**660,200**	**829,064**	**10,270**	**12,330**	**8,593,535**
Less: Sales and services, institutional	2,468	1,432	2,594	1,040	2,573	8,355	987	1,663	5,559	4,931	—	—	31,602
Interest revenue applied against debt charges	555	1,324	12,296	2,732	8,949	91,724	12,741	39,481	26,262	7,258	117	90	203,529
Conditional Transfers from—													
Federal Government	63,976	12,675	83,762	64,918	187,927	496,599	83,051	79,362	120,133	125,980	2,430	3,472	1,324,285
Municipal governments	10	2	782	—	4,008	4,124	2,483	1,000	10,863	—	—	—	23,272
Totals, Deductions	67,009	15,433	99,434	68,690	203,457	600,802	99,262	121,506	162,817	138,169	2,547	3,562	1,582,688
Totals, Net General Revenue	**164,670**	**33,066**	**209,954**	**211,658**	**2,287,998**	**2,295,682**	**291,670**	**311,380**	**497,383**	**690,895**	**7,723**	**8,768**	**7,010,847**

[1] Collected by the Federal Government for all provinces except Quebec and Ontario. [2] Collected by the Federal Government for all provinces except Quebec.
[3] Taxed under the general sales tax. [4] Collection of arrears. [5] Includes premiums for medical care insurance in Ontario, $20,674,000; in Saskatchewan, $5,629,000; and medical plan premiums in British Columbia, $11,266,000.

Function	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
General government	11,714	2,580	9,995	12,617	93,090	95,957	13,239	13,584	13,933	34,001	1,352	1,276	303,338
Protection of persons and property	6,625	856	6,982	5,925	92,446	116,289	11,234	11,689	30,392	28,795	481	1,849	313,563
Transportation and Communications—													
Highways, roads and bridges	53,220	12,212	63,719	68,875	308,839	427,387	46,184	65,035	98,620	95,087	2,321	429	1,241,928
Waterways	150	74	507	796	622	198	70	228	283	37,280	11	—	40,219
Other	11	—	54	—	3,520	10,403	1,169	640	189	—	4	—	15,990
Totals, Transportation and Communications	53,381	12,286	64,280	69,671	312,981	437,988	47,423	65,903	99,092	132,367	2,336	429	1,298,137
Health and Social Welfare—													
Health—													
General health	754	191	4,578	2,744	4,071	14,091	1,032	1,518	1,525	2,870	187	7	33,568
Public health	2,476	1,003	3,811	2,136	23,825	37,605	7,191	6,905	10,810	9,541	123	1,362	106,788
Medical, dental and allied services	4,406	380	1,388	2,451	16,348	67,867	5,544	26,226	3,903	32,087	8	93	160,701
Hospital care	41,967	7,406	59,074	50,289	580,937	646,726	71,478	83,804	152,816	142,530	757	1,752	1,839,536
Social Welfare—													
Old age assistance	1,974	1,020	2,191	2,297	17,280	2,754	2,117	797	2,594	3,068	12	95	36,199
Other aid to the aged	839	2,164	445	872	7,512	22,131	670	1,089	1,769	8,659	33	5	46,188
Aid to blind persons	382	261	591	498	2,210	470	270	157	352	424	5	31	5,651
Aid to disabled persons	946	591	3,138	2,052	16,803	2,159	1,379	310	2,089	2,190	3	22	31,682
Aid to unemployed and unemployables	30,678	2,498	12,243	8,884	134,371	115,072	13,620	21,882	51,631	44,688	90	255	435,912
Mothers' allowances	—	—	[1]	—	29,033	—	[1]	[1]	219	[1]	—	—	29,252
Child welfare	3,901	337	2,211	2,110	122,475	27,327	4,463	2,860	6,604	11,925	294	102	184,609
Labour	152	73	335	622	7,008	6,715	540	384	674	1,157	—	—	17,660
Winter works projects	213	1,043	60	—	27,831	9,670	1,386	1,907	2,840	664	—	128	45,742
Other social welfare	1,901	119	2,206	1,381	17,262	9,606	3,814	4,014	6,039	3,899	198	146	50,585
Totals, Health and Social Welfare	90,589	17,086	92,271	76,336	1,006,966	962,193	113,504	151,853	243,865	263,702	1,710	3,998	3,024,073
Recreational and cultural services	5,688	739	1,903	2,133	27,049	26,174	15,235	9,024	8,221	7,557	267	761	104,751
Education—													
Schools operated by local authorities	39,719[2]	7,628	46,436	64,890	417,330	627,742	62,701	70,790	141,147	110,793	3,536	324	1,593,036
Universities, colleges and other schools	41,179	2,453	34,432	23,552	281,635	288,994	38,205	26,558	126,393	73,753	694	3,075	940,923
Education of the handicapped	754	44	594	780	490	13,597	952	794	1,095	1,103	4	20	20,227

For footnotes, see end of table, p. 1166.

22.—Details of Cost of Services Provided by Provincial Governments, Year Ended Mar. 31, 1968—concluded

Function	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Education—concluded													
Superannuation and pensions	−110[3]	1	3,152	460	−2,742[3]	47,623	1,190	1,383	3,399	5,021	—	—	59,377
Other	1,231	201	5,521	3,311	53,427	38,038	7,872	2,943	1,850	2,693	76	447	117,610
Totals, Education	82,773	10,327	90,135	92,993	750,140	1,015,994	110,920	102,468	273,884	193,363	4,310	3,866	2,731,173
Natural Resources and Primary Industries—													
Fish and game	6,217	375	4,289	1,005	12,344	1,403	985	670	1,566	3,230	38	124	32,246
Forests	3,788	182	3,819	4,239	24,836	43,627	2,184	2,236	11,884	30,425	28	—	127,248
Lands: settlement and agriculture	2,210	2,016	4,805	6,817	66,152	31,232	9,397	10,287	14,789	10,780	30	—	158,515
Minerals and mines	995	—	1,203	438	4,438	3,804	575	3,045	5,177	2,803	17	—	22,495
Water resources	4	—	208	240	4,550	12,269	12,412	4,719	5,176	4,761	—	—	44,339
Other	267	—	70	761	4,219	1,108	1,852	3,635	1,104	339	—	—	13,355
Totals, Natural Resources and Primary Industries	13,481	2,573	14,394	13,500	116,539	93,443	27,405	24,592	39,696	52,338	113	124	398,198
Trade and industrial development	7,377	655	3,537	1,650	13,283	14,540	5,095	2,217	4,419	4,396	117	154	57,440
Local government planning and development	913	89	563	1,521	3,743	9,571	2,454	1,968	2,879	2,460	172	41	26,374
Debt charges excluding debt retirement	18,775	5,770	29,785	22,847	96,109	154,064	20,974	35,363	2,601	35	456	480	387,259
Contributions to government enterprises	5,693	35	3,470	6,367	—	1,031	—	—	—	1,000	—	—	17,596
Home owners' subsidies	—	—	—	—	—	—	—	8,577	11,846	41,491	—	—	61,914
Other expenditure	3,424	−2	564	1,486	19,187	11,854	2,239	178	1,911	11,106	596	988	53,531
Unconditional grants to local governments	3,629	519	5,097	11,807	120,427[4]	52,442	8,911	—	27,362	27,844	226	273	258,537
Totals, Gross General Expenditure	**304,062**	**53,513**	**322,976**	**318,853**	**2,651,960**	**2,991,540**	**378,633**	**427,416**	**760,101**	**800,455**	**12,136**	**14,239**	**9,035,884**
Less: Revenue derived from expenditure functions and applied thereto	3,023	2,756	14,890	3,772	11,522	100,079	13,728	41,144	31,821	12,189	117	90	235,131
Totals, Cost of Services Provided	**301,039**	**50,757**	**308,086**	**315,081**	**2,640,438**	**2,891,461**	**364,905**	**386,272**	**728,280**	**788,266**	**12,019**	**14,149**	**8,800,753**

[1] Replaced by "Social Assistance" which is included in "Aid to unemployed and unemployables". [2] Includes expenditures *re* primary and secondary schools operated on a denominational basis and for joint schools. [3] Excess of teachers' pension contribution over payment of pensions to teachers. [4] Includes compensation payable to municipalities in lieu of the right to impose a retail sales tax, $113,621,000.

Nature of Payment	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Transferred to Local Governments—													
Grants-in-Aid and Shared-Costs Contributions—													
General government services	—	22	50	24	—	224	10	—	—	—	—	70	400
Law enforcement	—	—	—	10	—	—	—	—	—	—	—	—	10
Corrections	—	—	—	—	—	892	—	3	—	—	—	—	895
Police protection	—	—	—	—	—	560	—	—	49	—	—	—	609
Fire protection	—	31	—	—	1,243	333	—	—	—	—	—	—	1,607
Other protection	—	—	—	—	14	20	—	—	—	—	—	—	34
Highways, roads and bridges	1,695	45	1,057	—	12,764	122,620	9,159	14,397	16,456	646	1	303	179,143
Hospital care	—	—	2,718	119	—	—	—	4	—	—	—	—	2,841
General health	—	—	—	—	—	10	104	—	—	—	—	—	114
Public health	436	6	184	—	4,706	10,456	—	204	2,076	511	—	340	18,919
Medical, dental and allied services	—	—	—	—	—	635	—	—	113	—	—	—	748
Aid to the unemployed and unemployables	—	—	4,267	379	—	34,453	—	1,845	2,755	30,697	—	—	74,396
Child welfare	—	—	—	—	—	666	—	—	—	—	—	—	666
Winter works projects	213	1,043	60	—	27,831	9,670	1,381	1,907	2,840	664	—	128	45,737
Other social welfare	—	—	—	17	—	—	—	2	575	—	—	—	594
Recreational and cultural services	—	4	17	—	1,580	2,742	53	1,586	734	56	—	—	6,772
Schools operated by local authorities	36,808[1]	6,670	43,056	51,516	414,276	592,371	57,474	68,051	135,067	110,040	—	326[1]	1,515,655
Lands: settlement and agriculture	492	—	—	—	20,394	1,473	—	—	397	8	—	—	22,764
Water resources	—	—	—	47	107	9,597[2]	—	575	—	—	—	—	10,326
Other	—	—	—	—	39	141	—	—	—	—	—	—	180
Trade and industrial development	—	12	—	—	—	—	56	—	—	—	—	—	68
Local government planning and development	49	—	172	198	250	6,061	315	510	355	40	76	—	8,026
Debt charges (excluding retirements)	—	2	—	—	3,027[3]	—	—	—	—	—	—	—	3,029
Other payments	468	—	36	533	5,674	6,588	—	18	1,300	473	—	—	15,090
Shared-revenue contributions[4]	—	—	11	—	—	1,490	—	—	154	—	—	—	1,655
Subsidies	3,629	499	4,759	11,807	118,974[5]	48,499	3,307	—	25,085	27,844	226	255	244,884
Grants in lieu of taxes on provincial government property	—	20	327	—	1,453	2,453	5,604	—	2,123	—	—	18	11,998
Totals, Transferred to Local Governments	**43,790**	**8,354**	**56,714**	**64,650**	**612,332**	**851,954**	**77,463**	**89,102[6]**	**190,079[6]**	**170,979[6]**	**303**	**1,440**	**2,167,160**
Transferred to Government of Canada—Other[7]	—	—	—	—	—	**43**	**77**	**198**	—	—	—	—	**318**
Totals, Transferred to All Governments	**43,790**	**8,354**	**56,714**	**64,650**	**612,332**	**851,997**	**77,540**	**89,300**	**190,079**	**170,979**	**303**	**1,440**	**2,167,478**

[1] Includes expenditures for primary and secondary schools which are operated on a denominational basis in Newfoundland and by the Territorial Government, the Federal Government and religious organizations in the Northwest Territories. [2] Includes grants of $9,593,000 to conservation authorities. [3] Represents interest on debt assumed from the City of Montreal, the Montreal Metropolitan Corporation and the Village of Parent. [4] Nova Scotia—share of Crown land leases; Ontario—share of liquor licences; Alberta—share of liquor fines. [5] Represents compensation payable to municipalities in lieu of right to impose a sales tax. [6] Home-owners subsidies are not included in the total. It is considered that local governments merely act as agents for the provincial governments. See Table 22 for record of these payments. [7] Ontario—annuities and bonuses to Indians; Manitoba—water storage charges; Saskatchewan—transportation costs of certain immigrants and payments on South Saskatchewan River Dam agreement.

Debt of Provincial Governments.—Table 24 shows total bonded debt, by provin as at Mar. 31, 1966-68, Table 25 shows that the majority of bond issues are payable Canada, and Table 26 gives details of total direct and indirect debt of provincial gove ments as at Mar. 31, 1968.

24.—Gross Bonded Debt (exclusive of Treasury Bills) of Provincial Governments, as at Mar. 31, 1966-68

Province and Year	Bonded Debt	Average Interest Rate	Average Term of Issue	Province and Year	Bonded Debt	Average Interest Rate	Avera Term Issu
	$'000	p.c.	yrs.		$'000	p.c.	yrs.
Newfoundland—				Manitoba—			
1966	211,871	5.61	21.2	1966	294,706	4.52	16.
1967	269,575	5.68	21.7	1967	278,693	4.78	17.
1968	354,544	5.98	20.2	1968	304,159	4.87	17.
Prince Edward Island—				Saskatchewan—			
1966	41,562	5.28	18.3	1966	606,936	4.76	19.
1967	58,541	5.55	21.6	1967	665,315	4.86	19.
1968	64,332	5.74	21.0	1968	687,063	4.94	19.
Nova Scotia—				Alberta—			
1966	376,393	4.48	19.7	1966	8,283	2.86	20.
1967	454,210	4.82	20.8	1967	7,183	2.87	20.
1968	580,136	5.31	21.7	1968	6,019	2.89	20.
New Brunswick—				British Columbia—			
1966	297 090	4.57	20.9	1966	70,211	3.44	24.
1967	371,332	5.00	20.9	1967	67,917	3.47	24.
1968	394,382	5.16	21.0	1968	67,917	3.47	24.
Quebec—							
1966	1,340,812	5.07	17.4				
1967	1,469,031	5.35	18.4	**Totals—**			
1968	1,674,654	5.60	18.7	**1966**	**5,512,510**	**4.74**	**19.**
Ontario—							
1966	2,264,646	4.60	21.3	**1967**	**6,302,790**	**4.95**	**20.**
1967	2,660,993	4.75	21.0				
1968	3,269,217	5.01	20.9	**1968**	**7,402,423**	**5.08**	**20.**

25.—Gross Bonded Debt (exclusive of Treasury Bills) of Provincial Governments, by Place Payment, as at Mar. 31, 1966-68

Payable in—	1966	1967	1968
	$'000	$'000	$'000
Canada	4,390,263	5,095,232	5,924,14
United States	1,006,202	1,131,848	1,408,06
United States and Canada	84,070	48,365	47,20
Britain, United States and Canada	22,872	18,242	13,91
Switzerland	9,103	9,103	9,10
Totals	**5,512,510**	**6,302,790**	**7,402,42**

	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Direct Debt—													
Funded Debt—													
Bonded Debt—General	330,851	60,044	532,274	357,375	1,672,410	3,102,903[1]	243,004	617,285	6,019	67,917	—	—	6,990,082
Bonds issued in respect of Canada Pension Plan loans	23,693	4,288	47,862	37,007	2,244	72,860	48,588	55,550	—	—	—	—	292,092
Debentures issued in respect of loans under the Municipal Development and Loan Act	—	—	—	—	—	93,454	12,567	14,228	—	—	—	—	120,249
Total Bonded Debt	354,544	64,332	580,136	394,382	1,674,654	3,269,217	304,159	687,063	6,019	67,917	—	—	7,402,423
Less sinking funds	41,000	8,872	107,596	79,810	154,017	130,281	97,629	173,630	—	67,917	—	—	860,752
Net bonded debt	313,544	55,460	472,540	314,572	1,520,637	3,138,936	206,530	513,433	6,019	—	—	—	6,541,671
Net treasury bills (term of 2 or more years)	—	—	—	—	88,000	—	17,097	36,314	4,970	—	—	—	146,381
Net Funded Debt	313,544	55,460	472,540	314,572	1,608,637	3,138,936	223,627	549,747	10,989	—	—	—	6,688,052
Short-term treasury bills (less than 2 years)	—	20,500	—	24,250	—	—	81,121	13,000	—	—	—	—	138,871
Temporary loans and overdrafts	40,930	5,661	849	33,918	82,964	—	9,915	10,473	—	2,212	—	—	186,922
Trust funds, savings and other deposits	—	5,285	1,371	1,902	399	340,775	2,795	1	20	13,356	77	137	366,118
Accounts and other payables	48,886	4,531	42,019	22,979	469,606[2]	220,982[3]	4,490	5,037	33,845	31,991	11,755	14,877	910,998
Accrued interest and other accrued expenditure	1,396	—	8,278	9,458	43,544	7,626	12,062	10,579	79	—	—	—	93,022
Totals, Direct Debt (less Sinking Funds)	**404,756**	**91,437**	**525,057**	**407,079**	**2,205,150[4]**	**3,708,319**	**334,010**	**588,837**	**44,933**	**47,559**	**11,832**	**15,014**	**8,383,983**
Indirect Debt—													
Guaranteed bonds or debentures	109,573	10,324	6,941	269,365	2,341,734	1,756,075	608,860	18,494	874,076	2,145,173	—	—	8,140,615
Securities issued in respect of Canada Pension Plan loans	—	—	—	—	—	—	(29,800)	—	(113,300)	(186,100)	—	—	(329,200)
Less sinking funds	306	—	985	4,478	79,948	61,615	29,301	—	40,094	159,009	—	—	375,736
Net guaranteed bonds or debentures	109,267	10,324	5,956	264,887	2,261,786	1,694,460	579,559	18,494	833,982	1,986,164	—	—	7,764,879
Guaranteed bank loans	29,398	7,769[5]	26,085	5,626	309,513	190,507	—	2,399	2,592	281	—	—	574,170
Municipal Improvement Assistance Act loans	—	—	71	3	417	—	—	36	9	10	—	—	546
Other guarantees	41,253	2,531	—	4,000	228,250	—	—	49,005	6,380	—	—	—	331,419
Totals, Indirect Debt (less Sinking Funds)	**179,918**	**20,624**	**32,112**	**274,516**	**2,799,966**	**1,884,967[6]**	**579,559**	**69,934**	**842,963[7]**	**1,986,455**	—	—	**8,671,014**
Totals, Direct and Indirect Debt (less Sinking Funds)	**584,674**	**112,061**	**557,169**	**681,595**	**5,005,116**	**5,593,286**	**913,569**	**658,771**	**887,896**	**2,034,014**	**11,832**	**15,014**	**17,054,997**
Direct and indirect debt included above held as identifiable provincial investments	—	—	—	314	—	288	45,707	23,130	107	—	—	—	69,546

[1] Includes bonds issued by the Ontario Junior Establishment Loan Corporation, $11,000,000, and by the Ontario Municipal Improvement Corporation, $21,000,000.
[2] Includes debts assumed by the province as follows: Metropolitan Boulevard, $56,251,000; loans of the Quebec Municipal Commission for the settlement of school debts in 1942, $8,034,000; loans contracted by certain university institutions, $47,362,000; loans of the Village of Parent, $337,000; and loan by the Institute of Microbiology and Hygiene of the Université de Montréal, $5,450,000. [3] Includes net liability of the province *re* Ontario Savings Office, $92,323,000, at Mar. 31, 1968. [4] Excludes debt of toll roads authority. [5] Amount authorized; information *re* amounts outstanding is not available. [6] In addition, the province has guaranteed the interest on school district debentures having a par value of $3,295,000, on sewage disposal and water supply systems debentures having a par value of $2,163,000 and on principal of mortgage loans under the Elderly Persons Housing Act of $1,271,000. [7] Excludes guaranteed interest under the School Borrowing Assistance Act and the School Buildings Assistance Act on principal borrowing of $7,435,000.

Section 6.—Municipal Government Finance

Municipal Taxation.—Table 27 shows, for the year 1967, local taxes levied b municipalities and by some school authorities and total taxes outstanding at the end of th year. Because of the considerable differences in the division of responsibility for servic between the provincial governments and their respective municipalities, these figures shoul not be used as a basis for interprovincial comparisons of the relative burden of municip taxation.

27.—Municipal Taxation, by Province, 1967

Item	New-found-land	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
Taxation revenue.....$'000	8,629	5,085	59,364	10,313	725,321	1,153,0
Tax Collections, Current and Arrears—						
Total.....$'000	7,879	5,202	56,739	10,382	..	1,147,7
Percentage of taxation revenue.....p.c.	91.31	102.30	95.58	100.67	..	99.
Taxes receivable, current and arrears.....$'000	3,465	1,386	14,685	279	118,252	101,7
Percentage of taxation revenue.....p.c.	40.16	27.25	24.74	2.71	16.30	8.

Item	Manitoba	Sas-katch-ewan	Alberta	British Columbia	Yukon Terri-tory	North-west Terri-tories
Taxation revenue.....$'000	111,423	137,938	190,289	264,253	496	71
Tax Collections, Current and Arrears—						
Total.....$'000	108,312	133,110	189,942	254,292	535	65
Percentage of taxation revenue.....p.c.	97.21	96.50	99.82	96.23	107.86	92.6
Taxes receivable, current and arrears.....$'000	22,890	17,491	31,127	7,903	132	20
Percentage of taxation revenue.....p.c.	20.54	12.68	16.36	2.99	26.61	28.7

Municipal Revenue, Expenditure and Debt.—Tables **28**, **29** and **30** show com parative totals and details of gross revenue and expenditure of municipal governments by province, and Table **31** sets out the direct debt of municipal and school corporations fo the fiscal years ended nearest Dec. 31, 1967.

28.—Gross Revenue and Expenditure of Municipal Governments, by Province, Fiscal Years Ended Nearest Dec. 31, 1967

Province	Gross Revenue	Gross Expenditure	Province or Territory	Gross Revenue	Gross Expenditur
	$'000	$'000		$'000	$'000
Newfoundland	17,254	20,213	Saskatchewan	268,050	282,579
Prince Edward Island	15,065	16,412	Alberta	458,544	528,818
Nova Scotia	128,028	143,690	British Columbia	516,552	570,691
New Brunswick	32,294	37,677	Yukon Territory	1,066	953
Quebec	1,412,685	1,581,827	Northwest Territories	2,146	2,526
Ontario	2,259,419	2,435,977			
Manitoba	234,840	237,142	**Canada**	**5,345,943**	**5,858,505**

Source	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Taxes, General and School—													
Real property	4,732	4,087	45,208	10,223	544,338[1]	991,440	93,410	119,442	164,499	237,999	411	628	2,216,417
Personal property	5	333	8,687	—	..	...	[2]	...	...	...	...	...	9,025
Business	2,123	385	2,195	—	43,177	132,514	8,106	7,587	10,133	6,712	...	18	212,950
Poll	355	132	2,028	—	..	28	—	11	...	...	...	12	2,566
Sales and amusement	1,074	39	...	—	7,255[3]	...	601	3,513	...	...	...	...	12,482
Other	58	—	361	82	7,282	...	25	239	—	13	...	...	8,060
Special assessments (owner's share) and charges	282	109	885	8	123,269	29,108	9,281	7,146	15,657	19,529	85	52	205,411
Totals, Taxes	8,629	5,085	59,364	10,313	725,321	1,153,090	111,423	137,938	190,289	264,253	496	710	2,666,911
Privileges, licences and permits	553	85	822	668	16,414	15,965	2,335	3,189	9,838	12,081	42	31	62,023
Sales and services	2,075	512	6,927	5,236	40,098	109,318	15,965	18,666	30,383	28,368	177	195	257,920
Fines and penalties	11	108	432	141	13,734	35,629	1,744	2,243	3,958	5,956	19	9	63,984
Interest, discount, etc	30	6	1,049	128	3,761	—	1,751	2,010	2,393	3,205	—	2	14,335
Own enterprise contributions	38	152	333	474	5,899	419	2,363	3,343	17,332	1,936	—	—	32,289
Other revenue	1,327	107	675	603	24,190	55,707	5,031	4,949	9,498	4,398	8	120	106,613
Gross Revenue From Own Sources	12,663	6,055	69,602	17,563	829,417	1,370,128	140,612	172,338	263,691	320,197	742	1,067	3,204,075
Conditional Transfers from—													
Federal Government	214	2	1,936	1,296	4,393	7,251	2,903	786	4,041	3,621	—	—	26,443
Provincial Governments	1,739	8,466	48,743	1,483	451,310	790,268	80,973	90,800	160,332	186,273	90	640	1,821,117
Totals, Conditional Transfers[4]	1,953	8,468	50,679	2,779	455,703	797,519	83,876	91,586	164,373	189,894	90	640	1,847,560
Unconditional Transfers—													
From Governments—													
Federal grants in lieu of taxes	188	81	3,062	—	1,794	—	2,053	1,346	3,202	2,727	75	107	14,635
Other	—	20	—	643	1,425	20,635	—	—	3	88	—	51	22,865
Provincial grants in lieu of taxes	21	—	700	—	700	—	3,606	100	2,124	712	—	12	7,975
Other	2,418	437	1,911	11,309	121,935	57,754	3,094	247	23,708	[6]	159	269	223,241
From Government Enterprises—[5]													
Federal	11	4	1,248	—	1,581	5,153	57	37	—	665	—	—	8,756
Provincial	—	—	826	—	130	8,230	1,542	2,396	1,443	2,269	—	—	16,836
Totals, Unconditional Transfers	2,638	542	7,747	11,952	127,565	91,772	10,352	4,126	30,480	6,461	234	439	294,308
Totals, Transfers	4,591	9,010	58,426	14,731	583,268	889,291	94,228	95,712	194,853	196,355	324	1,079	2,141,868
Gross General Revenue	**17,254**	**15,065**	**128,028**	**32,294**	**1,412,685**	**2,259,419**	**234,840**	**268,050**	**458,544**	**516,552**	**1,066**	**2,146**	**5,345,943**

[1] Includes $50,000,000 special taxes (Quebec). [2] Personal property included in real property in Manitoba. [3] Amusement only (Quebec). [4] See Table 19, p. 1159, for analysis. [5] Grants are mostly in lieu of taxes. [6] The per capita (unconditional transfers) grant in British Columbia now included with the "Conditional Transfers", due to an amendment effective Jan. 1, 1967.

30.—Details of Gross Expenditure of Municipal Governments, Fiscal Years Ended Nearest Dec. 31, 1967

Function	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
General government services	3,081	364	7,850	3,005	91,393	101,215	10,497	12,042	17,240	21,181	218	629	268,706
Protection of persons and property	1,230	728	10,703	7,688	118,021	193,655	19,043	14,170	33,896	49,505	129	63	448,831
Public works	6,375	699	5,643	9,240	91,269	304,759	35,048	51,756	82,581	49,023	108	289	636,790
Sanitation and waterworks	4,351	470	11,615	7,585	153,785	203,831	16,812	16,922	37,157	45,209	212	398	498,347
Health	9	2	4,542	107	8,168	40,599	1,935	7,284	16,522	4,746	10	16	83,940
Social welfare	2	51	7,992	14	5,508	74,882	4,140	2,860	7,083	38,164	—	—	140,696
Education (excl. debenture debt charges)	—	12,343	79,322	1,316	702,280	1,197,903	115,186	142,784	268,577	277,697	186	789	2,798,383
Recreation and community services	1,319	518	3,787	3,770	37,287	90,340	9,419	11,240	24,037	34,004	41	268	216,030
Debt Charges (excl. Retirements and Sinking Fund Contribution)—													
Debenture interest	1,214	999	6,527	2,622	156,821	131,529	13,326	13,287	27,150	31,434	36	45	384,990
Other long-term interest	208	9	342	95	818	861	—	283	—	—	—	—	2,616
Other	969	82	954	433	5,193	11,845	1,117	1,211	452	1,462	—	1	23,719
Totals, Debt Charges	2,391	1,090	7,823	3,150	162,832	144,235	14,443	14,781	27,602	32,896	36	46	411,325
Own enterprises	340	—	89	262	—	11,982	1,926	793	2,798	139	—	5	18,334
Other Expenditures—													
Provision for reserves	657	106	1,217	10	3,577	17,869	3,281	4,451	4,039	11,453	1	32	46,693
Special projects	—	—	—	—	—	3,907	—	—	—	—	—	—	3,907
Other	458	41	3,107	1,530	207,707	50,800	5,412	3,496	7,286	6,674	12	—	286,523
Totals, Other Expenditures	1,115	147	4,324	1,540	211,284	72,576	8,693	7,947	11,325	18,127	13	32	337,123
Gross General Expenditure (Cost of Services Provided)	**20,213**	**16,412**	**143,690**	**37,677**	**1,581,827**	**2,435,977**	**237,142**	**282,579**	**528,818**	**570,691**	**953**	**2,526**	**5,858,505**

31.—Debt of Municipal and School Corporations, as at Fiscal Year-Ends Nearest Dec. 31, 1967

Direct and Indirect Debt	Nfld.	P.E.I.	N.S.	N.B.	Que.[1]	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Direct Debt (less Sinking Funds)—													
Debenture debt	26,185	14,999	139,650	57,153	2,185,612	2,820,808	292,342	269,699	686,030	729,074	853	877	7,223,282
Less sinking funds	63	3,116	3,817	4,241	5,618	231,883	30,267	25,175	5,295	68,133	—	—	377,608
Net debenture debt	26,122	11,883	135,833	52,912	2,179,994	2,588,925	262,075	244,524	680,735	660,941	853	877	6,845,674
Temporary loans and bank overdrafts	17,707	1,752	34,362	11,299	153,864	183,348	45,981	14,453	27,179	20,473	—	427	510,845
Accounts and other payables	18,843	375	10,355	3,843	145,193	221,344	17,887	17,740	28,144	23,615	65	828	488,232
Other liabilities	3,245	67	6,045	1,961	103,010	58,104	14,179	13,770	21,609	15,532	37	307	237,866
Totals, Direct Debt (less Sinking Funds)	**65,917**	**14,077**	**186,595**	**70,015**	**2,582,061**[2]	**3,051,721**	**340,122**	**290,487**	**757,667**	**720,561**	**955**	**2,439**	**8,082,617**

[1] Data for Quebec schools not available.

[2] Includes $43,570,000 debentures of the Montreal Transportation Commission guaranteed by the City of Montreal.

CHAPTER XXIV.—TRENDS IN ECONOMIC AGGREGATES*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

In this Chapter various statistical statements and studies are presented in which br areas of Canadian economic activity are covered in a comprehensive but summary fo These integrated aggregative economic accounts provide an interrelated framework economic analysis and the observation of changes in the functioning of the Canad economy and its structure and in economic and financial relationships with other countr

Section 1.—National Income and Expenditure Accounts

The national income and expenditure accounts, which have recently undergon complete and comprehensive historical revision, constitute a subset of the system of natio accounts (also included in this system are the balance of international payments, inp output tables, indexes of real domestic product by industry and financial flow accoun The national income and expenditure accounts provide accounting summaries for the na as a whole and portray economic activity in terms of transactions taking place betw major groups of transactors, namely, governments, corporate and government busi enterprises, persons and unincorporated businesses and non-residents. By combining summarizing these operations into their various classes, information may be obtained the functioning of the economy, which is of particular interest to governments concer with problems of full employment, taxation and prices, and to businessmen concerned v programs of investment and marketing.

The tables on pp. 1179-1183 are based on the historically revised series of the nati income and expenditure accounts. The new accounts incorporate major statistical revis and changes in definitions and structural presentation. A full 1926-66 coverage of tables for national income and gross national product (Table 2) and for gross national

* Section 1 was prepared in the National Income and Expenditure Division, Sections 2 and 3 in the Nat Output and Productivity Division and Sections 4 and 5 in the Balance of Payments and Financial Flows Div of the Dominion Bureau of Statistics. Section 6 was prepared by the authorities concerned.

nditure in current and in constant (1961) dollars (Tables **3** and **4**) is available in a DBS nmary report *National Income and Expenditure Accounts, 1926-68*. Definitions are as lows:—

National Income.—Net national income at factor cost measures the current earnings Canadian factors of production (i.e., land, labour, capital) from productive activity. includes wages and salaries, profits, interest, net rent and net income of farm and non-m unincorporated business.

Gross National Product.—Gross national product, by totalling all costs arising in oduction, measures the market value of all final goods and services produced in the rent period by Canadian factors of production. It is equal to national income plus net irect taxes (indirect taxes less subsidies), plus capital consumption allowances and scellaneous valuation adjustments.

Personal Income.—Personal income is the sum of current receipts of income whether not these receipts represent earnings from production. It includes transfer payments m government (such as family allowances, unemployment insurance benefits and war vice gratuities) in addition to wages and salaries, net income of unincorporated business, erest and dividends and net rental income of persons. It does not include undistributed fits of corporations and other elements of the national income not paid out to persons.

Gross National Expenditure.—Gross national expenditure measures the same aggregate gross national product, namely, total production of final goods and services at market es, by tracing the disposition of production through final sales to persons, to governn-nts, to business on capital account (including changes in inventories) and to non-dents (exports). Imports of goods and services, including net payments of interest dividends to non-residents, are deducted since the purpose is to measure only Canadian duction.

nomic Activity in 1969

The Canadian economy maintained its momentum through 1969. The value of goods services produced rose by 9.9 p.c. to reach $78,537,000,000. This expansion, which npares with an 8.7-p.c. increase in the previous year, occurred despite the imposition of rictive fiscal and monetary measures and despite numerous labour disputes which were ected in a record number of man-hours lost. The rate of inflation accelerated during year; the rise of 4.7 p.c. in the implicit price deflator for gross national product, which the highest recorded since 1961, compares with increases of about 3.5 p.c. in the two ceding years. In real terms, gross national product rose by 5.0 p.c., about the same rate n 1968.

Widespread buoyancy of demand in the first quarter gave a strong initial impetus to economy. Although the rate of advance slackened in the second quarter, when the e of production rose only moderately, good advances were again shown in the summer fall quarters. For the year as a whole, two key developments were an acceleration in rate of consumer spending, and renewed high rates of business investment in plant and pment after two years of declines. With the economy performing vigorously, employ-t grew by 3.2 p.c. and the labour force increased by 3.1 p.c. As a result, the unemploy-t rate for the year declined from the 1968 level of 4.8 p.c. to 4.7 p.c.

Personal expenditure on consumer goods and services rose by 9.8 p.c. compared with .c. in 1968. This was the largest percentage increase shown in the current expansion. h of the increased expenditure reflected price movements rather than real gains, but constant dollar estimates also showed a sizable rise of 5.6 p.c.—the largest since 1965. s, consumer spending in 1969 was more than maintained in the face of sharply increasing me taxes (up over 20 p.c.) and historically high interest rates. The latter factor may, ever, have affected spending on automobiles which, with a 3-p.c. rise, was one of the few r items to show a substantially smaller rate of increase than in 1968, when it rose 0 p.c.

After the very high rates of increase in investment of 15 to 20 p.c. that prevailed the mid-1960s, business gross fixed capital formation registered small advances of about p.c. in both 1967 and 1968; in 1969 it rose by 9.4 p.c. Business residential constructi made a further impressive gain (18.4 p.c. versus 15.8 p.c. in 1968) and accounted for near half of the increase in the total. The upswing in activity in residential construction starti in the spring of 1967 and accelerating through 1968 slowed down in the second half of t year, as credit tightness in mortgage markets contributed to a sharp drop in the number starts in the spring. The acceleration in the rate of business gross fixed capital formati was due largely to the marked pick-up in business investment in plant and equipmer which rose by 6.3 p.c. compared with declines of 3.5 p.c. in 1968 and one half of 1 p.c. 1967. The increase of 3.5 p.c. in non-residential construction was considerably smal than the 15 p.c. indicated by the mid-year forecast of business intentions and, in fact, no residential construction declined in real terms by 2.6 p.c.

Canada's balance of transactions in goods and services deteriorated in 1969 from deficit of $193,000,000 to one of $866,000,000, as the rate of increase of imports accelerat while exports slowed somewhat. Although the rise in imports was very broadly base automotive products and capital goods accounted for about half of the increase in t merchandise account. Highlighting the increase in service imports was an exceptiona large rise of 26 p.c. in Canadian tourist and travel expenditures abroad. The rise in expor which was entirely oriented to United States markets, consisted very largely of automoti products, in line with the continuing rationalization of that industry resulting from t Canada–United States automotive trade agreement. Other exports rose only moderate

On the income side, wages and salaries rose by 12.2 p.c.; only the boom year 19 showed a larger gain in the current expansion. Most of the increase was due to high rates of pay. Within the year, there was a deceleration in the quarterly rate of increa in labour income, from a 3.6-p.c. increase in the last quarter of 1968 to one of 2.5 p.c. in t closing quarter of 1969. Corporation profits for the year 1969 rose by 5.5 p.c.; they r substantially in the first quarter of the year, declined in the following two quarters, especia in the summer, and showed little change in the fall quarter. This slow performance profits was due in part to the large number of strikes in 1969, but cost pressures combin with smaller productivity gains were probably additional factors. Among other inco components, the major movements were shown by interest and miscellaneous investme income which moved up 23.9 p.c., and by accrued net income of farm operators from fa production which increased 15.2 p.c.

Aggregate price change as measured by the implicit price index of gross national e penditure rose by 4.7 p.c. in 1969 compared to 3.5 p.c. in 1968. All major compone except personal expenditure on consumer goods and services showed higher rates of incre than in 1968. The decline in the rate of price increase of personal expenditure coupl with the increase in the price index of imports (which is a negative item) dampened t total price increase.

In personal expenditure, price deceleration occurred in durable and non-durable goo and prices of semi-durable goods rose at about the same rate as in 1968; service prices, the other hand, accelerated. Home furnishings, furniture and new cars contributed the slowdown in prices of durable goods. Within the non-durable group, there w offsetting movements, with higher rates of increase in the prices of food, women's and ch dren's clothing, drugs and cosmetics, auto parts and accessories, and newspapers a magazines, and lower rates in electricity, tobacco products, alcoholic beverages, me and boys' clothing and footwear. In services, increases were widespread, particularly personal services and care, transportation, domestic servants, communication, medi care and rents.

Strong increases occurred in the implicit price indexes of residential and non-resident construction; labour costs rose by about 11 p.c. and the materials component advanced about 5 p.c. Machinery and equipment prices increased by 2.5 p.c.

Components of Demand.—Personal expenditure on goods and services rose by ,171,000,000 to reach $46,531,000,000. This increase of 9.8 p.c.—compared with one 8.6 p.c. in 1968 which was the largest recorded since 1951—was very broadly based. real terms, however, the increase of 5.6 p.c. was smaller than the rates of increase in 4 and 1965 but larger than the 4.5 p.c. recorded in 1968.

There was an acceleration in the expenditure on most components. The sharp in- ases in the rates of furniture and home furnishings may be related to the high levels of idential construction in 1967 and 1968. In real terms, outlays on furniture rose by p.c. after a marginal decline in 1968. The accelerations in the rates of increase of enditure on shelter and household operations and in total transportation are also notable. e latter's increase of 7.0 p.c., however, was due entirely to price increases. A feature the year in consumer expenditure was a jump of 28 p.c. in travel expenditures by Cana- ns abroad. The only major items to show sharply reduced rates of increase in 1969 were acco and new and used cars. The former increased by 2.2 p.c. —much lower than the r 6-p.c. gains achieved in recent years. In real terms, however, tobacco consumption lined by 2.6 p.c. against a decline of 4.8 p.c. in 1968. The rise in outlays on new and d cars of 2.8 p.c. occurred after an exceptionally strong rise in 1968; the increase in new purchases in 1969 was heavily centred on cars of European manufacture.

Business capital outlays totalled $14,018,000,000 in current dollars in 1969, an increase $1,204,000,000 or 9.4 p.c. over the level of the previous year. Among the components, housing expenditures increased 18.4 p.c., adding $600,000,000, investment in new chinery and equipment rose 8.8 p.c. or $444,000,000 and non-residential construc- n, although its increase was markedly lower than that of the other components, added 0,000,000. Government capital outlays remained practically unchanged at a level of proximately $3,000,000,000, as increases in non-residential construction were offset by lines in machinery and equipment spending.

House-building activity set a new record in 1969 with starts of dwelling units numbering ,415 compared with the previous high of 196,878 starts in 1968. This increase was made sible in part by a large carryover of institutional mortgage loans which were approved 968 but did not lead to starts until 1969. Housing starts reached an annual total of ,300 in the first quarter but dropped off in each quarter to an annual rate of 186,000 in last quarter of 1969. New housing investment outlays, which follow developments in ts, rose throughout 1968 and until the last quarter of 1969.

Investment in non-farm business inventories was $534,000,000 in 1969 compared with 3,000,000 in 1968. The largest accumulation occurred in the first quarter—over 00,000,000 at annual rates. Manufacturing and retail trade each contributed about .c. and wholesale trade more than 40 p.c. to the total build-up in 1969.

In manufacturing, the accumulation of inventories was concentrated in the durable- ls-producing industries. Stock increases occurred in all groups except transportation ustries, which showed a depletion. Within non-durable-goods-producing industries, tting movements left on balance a nominal increase. The stock increases in both il and wholesale trade showed heavy strength in durable goods. In retail trade, the eases in the stocks of durables were widespread, whereas for non-durables the accumula- was almost entirely centred in the stocks of food.

Most of the increase in external trade* in 1969 took place in the first and fourth quarters. rchandise exports rose by almost 10 p.c., primarily spurred by sharp gains in automotive lucts and to a lesser extent in crude petroleum, pulp and newsprint. They increased $1,348,000,000, comprised of higher sales of $1,384,000,000 to United States markets, a in sales of $122,000,000 to United Kingdom markets, and a rise of $86,000,000 to all

* Based on data from DBS publication *Quarterly Estimates of the Canadian Balance of International Payments, First ter 1970* (Catalogue No. 67-001), with further adjustments for national accounts concepts.

others. Merchandise imports rose by 15.3 p.c., half of which was accounted for by machi ery and transportation and communication equipment (mainly automotive products The deficit on external account increased from $193,000,000 to $866,000,000. The me chandise trade surplus dropped by $508,000,000 to $868,000,000 which was accompanie by a deterioration of $165,000,000 in the non-merchandise deficit. The main element the larger service deficit was the worsening by $178,000,000 in the net balance on tourist a travel transactions; receipts increased by $87,000,000 but payments rose by $265,000,00

The Government Sector.—Total revenues of all levels of government combine including those from the Canada and Quebec Pension Plans, rose by just over 16 p.c. 1969 compared with somewhat smaller increases in 1968 and 1967. Almost half of the ri took place in revenue from personal income taxes and was partly associated with high rates of taxation, particularly the imposition of the social development tax at the feder level. Revenue from indirect taxes also rose substantially during the year and reflecte higher rates and broadened tax bases as well as greater sales. The other revenue categori registered smaller gains.

Total current expenditures of all governments rose by about 13 p.c., somewhat le than revenues. There were increases in all categories but more than half of the rise to place in outlays on goods and services, reflecting primarily higher wage and salary payment Transfer payments to persons rose sharply with roughly equivalent increases at the feder and provincial levels. Government capital expenditures declined slightly during the ye to the level of 1967.

With revenues advancing more rapidly than expenditures, the surplus of the gover ment sector, on a national accounts basis, more than doubled, moving from $994,000,0 in 1968 to $2,175,000,000 in 1969. A large part of the change took place at the feder level, as it moved from a deficit of $33,000,000 to a surplus of $775,000,000.

Components of Income.—Total labour income advanced by 12.2 p.c. during 1969 compared with rates of 9.1 p.c. in 1968 and 10.6 p.c. in 1967. Most of the advance result from increases in average weekly earnings. Wages and salaries in the goods-producin industries were 9.7 p.c. higher than in 1968, compared with gains of 5.7 p.c. in 1968 an 6.7 p.c. in 1967. Manufacturing increased by 10.7 p.c., construction by 9.0 p.c. and th primary industries, which were seriously affected by labour disputes in mining, by 4.8 p. In the service-producing industries, wages and salaries increased 14.2 p.c. as compared wit gains of 11.3 p.c. in 1967 and 13.7 p.c. in 1968. Transportation, communication and othe utilities increased 11.4 p.c., trade 13.1 p.c., finance, insurance and real estate 14.8 p.c public administration and defence 16.3 p.c. and service 15.5 p.c.

Corporation profits before taxes increased 5.5 p.c. in 1969 over 1968 to reac $7,852,000,000, partly reflecting their rapid rise during 1968. Within 1969, only the fir quarter showed a significant increase. Because of rising costs, tight money and labou they declined in the second and third quarters and increased only marginally in the closin quarter.

Accrued net income of farm operators from farm production increased over 15 p.c in 1969 above the 1968 level. The value of livestock production and the cash income fro the sale of other farm products were higher but the value of grain production declined reflecting a somewhat lower estimated value of the new crop and lower Canadian Whea Board profits as both exports and export prices continued to decline. Operating expense which had been rising at diminishing rates in the previous few years, showed little chang in 1969. Net income of non-farm unincorporated business, including rent, increase 4.6 p.c., one of the smaller increments in recent years. Lower than normal increases too place in the net income of the construction and retail trade industries, while normal increase occurred in the finance, personal and business service industries. Other industry group ings showed little change.

1.—Gross National Product in Current and Constant (1961) Dollars, and Index of Gross National Expenditure in Constant (1961) Dollars, 1926-69

Year	Gross National Product		Index of Gross National Expenditure in Constant (1961) Dollars (1961 = 100)	Year	Gross National Product		Index of Gross National Expenditure in Constant (1961) Dollars (1961 = 100)
	Millions of Current Dollars	Millions of Constant (1961) Dollars			Millions of Current Dollars	Millions of Constant (1961) Dollars	
6	5,146	10,203	26.1	1948	15,127	21,374	54.7
7	5,561	11,171	28.6	1949	16,300	22,119	56.6
8	6,050	12,191	31.2	1950	17,955	23,809	60.9
9	6,139	12,237	31.3	1951	21,060	25,004	64.0
0	5,720	11,713	30.0	1952	24,042	27,398	70.1
1	4,693	10,226	26.2	1953	25,327	28,862	73.9
2	3,814	9,166	23.5	1954	25,233	28,283	72.4
3	3,492	8,555	21.9	1955	27,895	31,079	79.5
4	3,969	9,594	24.5	1956	31,374	33,780	86.4
5	4,301	10,343	26.5	1957	32,907	34,710	88.8
6	4,634	10,801	27.6	1958	34,094	35,462	90.7
7	5,241	11,886	30.4	1959	36,266	36,929	94.5
8	5,272	11,984	30.7	1960	37,775	37,994	97.2
9	5,621	12,874	32.9	1961	39,080	39,080	100.0
0	6,713	14,687	37.6	1962	42,353	41,778	106.9
1	8,282	16,800	43.0	1963	45,465	43,996	112.6
2	10,265	19,917	51.0	1964	49,783	47,050	120.4
3	11,053	20,719	53.0	1965	54,897	50,149	128.3
4	11,848	21,539	55.1	1966	61,421	53,650	137.3
5	11,863	21,057	53.9	1967	65,722	55,517	142.1
6	11,885	20,493	52.4	1968	71,427	58,245	149.0
7	13,169	20,861	53.4	1969	78,537	61,148	156.5

2.—National Income and Gross National Product, by Component, 1966-69

(Millions of dollars)

Item	1966	1967	1968	1969
ges, salaries and supplementary labour income	31,907	35,275	38,493	43,203
itary pay and allowances	751	839	860	898
poration profits before taxes[1]	6,913	6,774	7,442	7,852
Deduct: Dividends paid to non-residents[2]	−835	−854	−857	−837
erest, and miscellaneous investment income[3]	2,015	2,335	2,580	3,196
crued net income of farm operators from farm production[4]	1,958	1,306	1,471	1,695
income of non-farm unincorporated business, incl. rent[5]	3,650	3,926	4,218	4,410
entory valuation adjustment	−327	−323	−317	−549
Net National Income at Factor Cost	**46,032**	**49,278**	**53,890**	**59,868**
irect taxes less subsidies	8,056	8,786	9,677	10,647
pital consumption allowances and miscellaneous valuation adjustments	7,414	7,877	8,411	9,066
idual error of estimate	−81	−219	−551	−1,044
Gross National Product at Market Prices	**61,421**	**65,722**	**71,427**	**78,537**

[1] Includes dividends paid to non-residents and excludes profits of government business enterprises. [2] Includes withholding tax. [3] Includes profits (net of losses) of government business enterprises and other government investment income. [4] Includes value of physical change in farm inventories. [5] Includes net income of independent professional practitioners.

3.—Gross National Expenditure, 1966-69

(Millions of dollars)

Item	1966	1967	1968	1969
Personal expenditure on consumer goods and services	36,057	38,998	42,360	46,531
Government current expenditure on goods and services	9,820	10,934	12,158	13,774
Gross fixed capital formation	15,405	15,684	15,809	17,011
Government	*2,845*	*2,969*	*2,995*	*2,993*
Business	*12,560*	*12,715*	*12,814*	*14,018*
Residential construction	*2,609*	*2,809*	*3,254*	*3,854*
Non-residential construction	*4,648*	*4,533*	*4,542*	*4,702*
Machinery and equipment	*5,303*	*5,373*	*5,018*	*5,462*
Value of physical change in inventories	1,230	408	741	1,043
Government	*1*	*29*	*29*	*6*
Business—				
Non-farm	*1,026*	*367*	*473*	*534*
Farm and grain in commercial channels	*203*	*12*	*239*	*503*
Exports of goods and services	13,088	14,713	16,795	18,480
Deduct: Imports of goods and services	−14,260	−15,235	−16,988	−19,346
Residual error of estimate	81	220	552	1,044
Gross National Expenditure at Market Prices	**61,421**	**65,722**	**71,427**	**78,537**

4.—Gross National Expenditure in Constant (1961) Dollars, 1966-69

(Millions of dollars)

Item	1966	1967	1968	1969
Personal expenditure on consumer goods and services	32,771	34,309	35,853	37,847
Government current expenditure on goods and services	7,900	8,225	8,539	8,892
Gross fixed capital formation	13,082	13,191	13,177	13,583
Government	*2,326*	*2,436*	*2,458*	*2,377*
Business	*10,756*	*10,755*	*10,719*	*11,206*
Residential construction	*2,189*	*2,218*	*2,518*	*2,854*
Non-residential construction	*3,952*	*3,834*	*3,782*	*3,682*
Machinery and equipment	*4,615*	*4,703*	*4,419*	*4,690*
Value of physical change in inventories	1,146	312	611	910
Government	*−3*	*22*	*23*	*3*
Business—				
Non-farm	*957*	*307*	*481*	*456*
Farm and grain in commercial channels	*192*	*−17*	*107*	*451*
Exports of goods and services	11,714	12,941	14,564	15,664
Deduct: Imports of goods and services	−13,034	−13,652	−14,954	−16,566
Residual error of estimate	71	191	455	818
Gross National Expenditure in Constant (1961) Dollars	**53,650**	**55,517**	**58,245**	**61,148**

5.—Year-to-Year Percentage Change in Gross National Expenditure, 1966-69

Item	1966	1967	1968	1969
	p.c.	p.c.	p.c.	p.c.
Personal Expenditure on Consumer Goods and Services—				
Value	8.8	8.2	8.6	9.8
Volume	5.3	4.7	4.5	5.6
Price	3.3	3.4	3.9	4.1
Government Current Expenditure on Goods and Services—				
Value	18.2	11.3	11.2	13.3
Volume	10.9	4.1	3.8	4.1
Price	6.6	6.9	7.1	8.8
Gross Fixed Capital Formation—				
Value	16.3	1.8	0.8	7.6
Volume	10.9	0.8	−0.1	3.1
Price	4.9	0.9	0.9	4.3
Government—				
Value	16.5	4.4	0.9	−0.1
Volume	10.3	4.7	0.9	−3.3
Price	5.5	−0.3	−0.1	3.4

5.—Year-to-Year Percentage Change in Gross National Expenditure, 1966-69—concluded

Item	1966	1967	1968	1969
	p.c.	p.c.	p.c.	p.c.
oss Fixed Capital Formation—concluded				
Business—				
Value	16.2	1.2	0.8	9.4
Volume	11.0	—	−0.3	4.5
Price	4.8	1.2	1.1	4.7
Residential Construction—				
Value	−1.0	7.7	15.8	18.4
Volume	−6.7	1.3	13.5	12.5
Price	6.1	6.2	2.1	5.3
Non-residential Construction—				
Value	20.4	−2.5	0.2	3.5
Volume	13.0	−3.0	−1.4	−2.6
Price	6.5	0.5	1.6	6.3
Machinery and Equipment—				
Value	23.0	1.3	−6.6	8.8
Volume	20.0	1.9	−6.0	6.1
Price	2.5	−0.6	−0.5	2.6
orts of Goods and Services—				
Value	16.6	12.4	14.2	10.0
Volume	13.2	10.5	12.5	7.6
Price	2.9	1.8	1.4	2.3
ports of Goods and Services—				
Value	15.5	6.8	11.5	13.9
Volume	13.6	4.7	9.5	10.8
Price	1.7	2.0	1.8	2.8
Gross National Expenditure at Market Prices—				
Value	**11.9**	**7.0**	**8.7**	**10.0**
Volume	**7.0**	**3.5**	**4.9**	**5.0**
Price	**4.6**	**3.4**	**3.5**	**4.7**

6.—Personal Income, by Source and by Province, 1966-69

(Millions of dollars)

Source and Province	1966	1967	1968	1969
Source				
ges, salaries and supplementary labour income	31,907	35,275	38,493	43,203
itary pay and allowances	751	839	860	898
income received by farm operators from farm production	1,794	1,379	1,690	1,644
income of non-farm unincorporated business including rent	3,650	3,926	4,218	4,410
erest, dividends and miscellaneous investment income	3,701	3,981	4,387	4,953
rent Transfers (excl. interest)—				
rom Government—				
Transfer payments to persons	3,722	4,640	5,346	6,060
Capital assistance	21	5	6	4
rom corporations (charitable contributions and bad debt allowances)	116	120	127	127
rom non-residents	40	43	43	44
Totals, Personal Income	**45,702**	**50,208**	**55,170**	**61,343**
Province				
wfoundland	628	699	754	829
nce Edward Island	149	165	185	200
va Scotia	1,295	1,442	1,575	1,760
w Brunswick	969	1,078	1,190	1,302
bec	11,820	13,140	14,264	15,718
ario	18,433	20,315	22,370	25,104
nitoba	2,073	2,318	2,579	2,785
skatchewan	2,057	2,001	2,298	2,413
erta	3,337	3,604	4,052	4,550
ish Columbia	4,763	5,244	5,686	6,451
kon and Northwest Territories	72	96	106	122
eign countries[1]	106	106	111	109

[1]Income of Canadians temporarily abroad, including pay and allowances of Canadian Armed Forces abroad.

7.—Disposition of Personal Income, 1966-69

(Millions of dollars)

Item	1966	1967	1968	1969
Personal expenditure on consumer goods and services	36,057	38,998	42,360	46,53
Current Transfers—				
To Government—				
Income taxes	3,903	4,904	5,922	7,46
Succession duties and estate taxes	215	215	235	23
Employer and employee contributions to social insurance and government pension funds	1,694	1,892	2,090	2,34
Other	391	405	539	79
To corporations (transfer portion of interest on the consumer debt)	333	360	398	46
To non-residents	110	138	110	12
Personal saving	2,999	3,296	3,516	3,38
Totals, Personal Income	**45,702**	**50,208**	**55,170**	**61,34**

8.—Personal Expenditure on Consumer Goods and Services, 1966-69

(Millions of dollars)

Item	1966	1967	1968	1969
Food and non-alcoholic beverages	6,374	6,730	7,143	7,63
Tobacco and alcoholic beverages	2,225	2,414	2,542	2,71
Clothing, footwear and accessories	2,937	3,155	3,338	3,57
Gross rent, fuel and power	6,235	6,896	7,579	8,37
Furniture, furnishing and household equipment and operation	2,796	2,949	3,068	3,31
Transportation	4,460	4,806	5,216	5,49
Medical care and health services	1,472	1,619	1,795	1,74
Other	9,558	10,429	11,679	13,67
Totals	**36,057**	**38,998**	**42,360**	**46,53**
Durables	4,832	5,058	5,509	5,92
Semi-durables	3,946	4,298	4,567	4,99
Non-durables	14,006	15,270	16,443	17,93
Services	13,273	14,372	15,841	17,68

9.—Federal, Provincial and Municipal Government Revenue and Expenditure,[1] 1966-6

(Millions of dollars)

Item	1966	1967	1968	1969
Revenue				
Direct Taxes: Persons—				
Income taxes	3,903	4,904	5,922	7,46
Succession duties and estate taxes	215	215	235	23
Employer and employee contributions to social insurance and government pension funds	1,694	1,892	2,090	2,34
Other current transfers	391	405	539	79
Direct taxes: corporate and government business enterprises	2,440	2,397	2,809	3,07
Direct taxes: non-residents (withholding taxes)	203	218	209	23
Indirect taxes	8,690	9,442	10,320	11,32
Investment Income—				
Interest and royalties	994	1,212	1,333	1,61
Remitted profits of government business enterprises	206	221	244	43
Totals, Revenue	**18,736**	**20,906**	**23,701**	**27,51**
Current Expenditure				
Purchases of goods and services	9,820	10,934	12,158	13,77
Transfer payments to persons	3,722	4,640	5,346	6,06
Current transfers to non-residents	193	216	170	18
Interest on the public debt	1,811	1,974	2,268	2,62
Capital assistance	64	74	86	10
Subsidies	634	656	643	67
Saving	2,492	2,412	3,030	4,09
Totals, Current Expenditure	**18,736**	**20,906**	**23,701**	**27,51**

[1] Excludes current transfers from other levels of government.

.—Federal, Provincial and Municipal Government Revenue and Expenditure, 1965-69—concluded

(Millions of dollars)

Item	1966	1967	1968	1969
Surplus on Deficit (on a national accounts basis)				
ing	2,492	2,412	3,030	4,091
: Capital consumption allowances	864	921	988	1,083
uct: Gross capital formation	−2,846	−2,998	−3,024	−2,999
als: Surplus	510	335	994	2,175

10.—Analysis of Corporation Profits, 1966-69

(Millions of dollars)

Item	1966	1967	1968	1969
oration profits before taxes and before dividends paid to non-residents	6,913	6,774	7,442	7,852
Deduct: Corporation income tax liabilities	−2,426	−2,379	−2,794	−3,044
Deduct: Excess of tax liabilities over collections	121	−38	235	−601
Deduct: Tax collections	2,305	2,417	2,559	3,645
oration profits after taxes	4,487	4,395	4,648	4,808
uct: Dividends paid to non-residents	−835	−854	−857	−837
oration profits retained in Canada	3,652	3,541	3,791	3,971
Deduct: Dividends paid to Canadian residents	−912	−959	−988	−1,033
Deduct: Charitable contributions	−71	−75	−79	−80
Deduct: Bad debts	−45	−45	−48	−47
Undistributed Corporation Profits	**2,624**	**2,462**	**2,676**	**2,811**

11.—Corporation Profits before Taxes and before Dividends Paid to Non-residents, by Industry, 1966-69

(Millions of dollars)

Industry	1966	1967	1968	1969
culture	16	17	22	24
stry	15	11	15	16
ng and trapping	—	1	—	—
s, quarries and oil wells	737	871	960	1,013
facturing	3,103	2,669	2,932	3,094
truction	261	282	313	330
sportation	353	312	342	361
ge	28	20	22	24
munication	253	268	290	306
ric power, gas and water utilities	126	117	127	133
esale trade	553	535	588	620
il trade	417	450	491	518
ce, insurance and real estate	796	925	1,012	1,068
munity, business and personal service	255	296	328	345
Totals	**6,913**	**6,774**	**7,442**	**7,852**

Section 2.—Industry Production Trends

Indexes of Real Domestic Product

The Dominion Bureau of Statistics in 1971 released a revised set of production d pertaining to the entire spectrum of Canadian industries. These data, in the form volume of production indexes, are measures of value added for each industry expressed the dollars of a base year. Technically, they are termed "indexes of real domestic prod (RDP) at factor cost originating by industry".* The value added, or RDP, volume inde can be regarded as an extension of the index of industrial production† to encompass remainder of the economy. Concepts and basic methods used to construct both inde are the same. Thus, industry production index coverage is extended from mining, ma facturing and electric power and gas utilities, for which volume indexes have been publis since the 1920s, to include all other major industrial divisions. The RDP indexes can a be regarded as an elaboration of the supply side of the national income accounts.*

In measuring the output of a single product such as steel, it is normal to think in ter of tons of steel when the question of quantity arises. When measuring the combi production of steel and natural gas, there is an obvious need for a common denomina and it is appropriate to use the average unit prices of a certain time period (chosen as t base) to value the quantities produced before adding them together. The result quantity, volume or real output measure can be subsequently left in its constant or b period dollar form or it can be expressed in index number form. The latter is accomplis by dividing the constant dollar aggregate of the current period by the dollar aggregate the base period and multiplying by 100. In constructing a quantity index for a combinat of industries where the output of one industry becomes the input of another, the port double-counted must be eliminated. This is accomplished by revaluing both intermedi input (materials, fuel, etc.) and total output in terms of the dollars of a common base y and subtracting the constant dollar value of the former from the latter to yield a consta dollar value added aggregate.* This aggregate is the quantity or volume measure rep sented by the indexes presented herein.

The annual indexes are well suited for studies of production trends, growth rates a inter-industry comparisons, but the quarterly indexes provide a much better tool for t study of the cyclical behaviour of industries, short-term changes in production and, in fa for most types of current analysis. Statistics computed for less than annual interv however, are frequently subject to strong seasonal influences, and variations in the numb of working days during a quarter may cause differences in the levels of output between t quarters which otherwise would not exist. Accordingly, the quarterly real output inde have been adjusted for both seasonal and calendar variation.

Factors Underlying Industrial Output Trends.—The early postwar period w marked by several major expansions. The first was based on satisfying the backlog war-deferred investment and consumer demand and on supplying the needs of the w devastated countries, especially for various materials. This was followed by some slowi down in production but the requirements of defence-supporting industries after the outbre of the Korean hostilities and stockpiling requirements at home and abroad introduce second expansionary period. The third was the investment boom of the mid-1950s duri which output reached a new high level. These strong demand influences combined make most of this period one of fairly rapid and sustained growth. During the late 19 the rate of increase diminished, as external sources of supply for many commodities mul

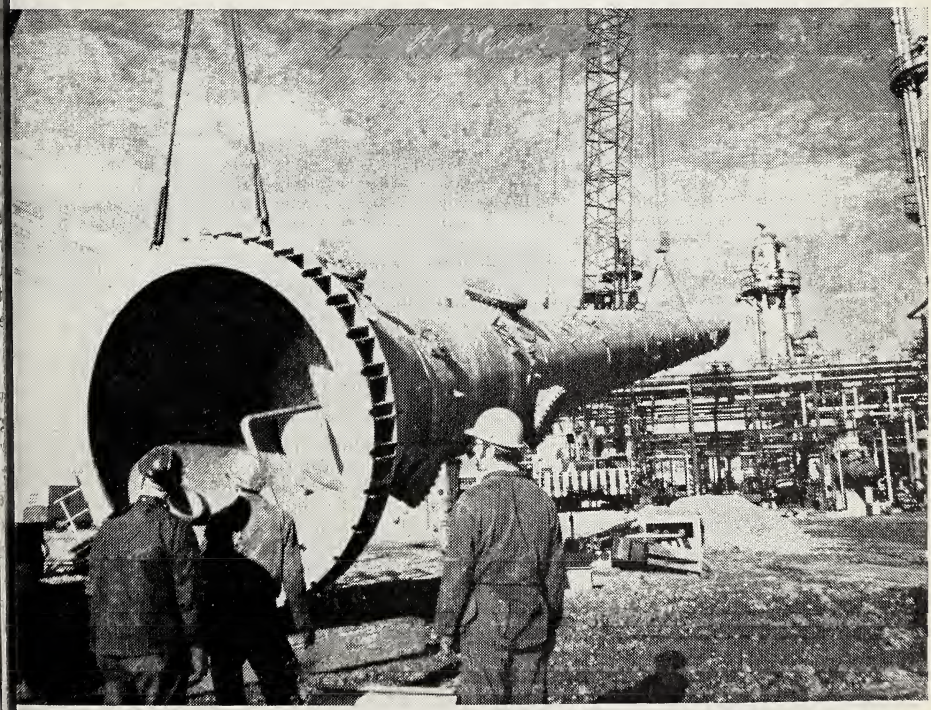
* *Indexes of Real Domestic Product by Industry, 1961-1969, 1961=100*, DBS Occasional Paper (Catalogue No. 510). For the period 1935-60, see *Indexes of Real Domestic Product by Industry, 1961 Base* (Catalogue No. 61-5 For a detailed explanation of concepts, methods and limitations, see *Indexes of Real Domestic Product by Industr Origin, 1935-61* (Catalogue No. 61-505). Current data on a quarterly or monthly basis are published in DBS mont *Index of Industrial Production* (Catalogue No. 61-005).

† See *Revised Index of Industrial Production, 1935-57* (Catalogue No. 61-502) and the current monthly publicat *Index of Industrial Production* (Catalogue No. 61-005).

d and as competition intensified. At the same time, there was an absence of strong nulants to domestic demand, such as the deferred demand and the population growth he preceding period.

During the 1960s, however, the first waves of the postwar generation exercised a wing influence on the demand for goods and services and this proved to be a sustaining tor throughout most of the period to date. There was particular strength in the durable nufacturing sector of the economy in response to both domestic and external demands. orts of goods and services advanced vigorously throughout most of the period, with s of wheat and motor vehicles and parts providing major thrusts. As a result of this yancy of foreign demand for Canadian goods and services, exports increased their share otal final demand. The underlying strength of the economy provided a healthy climate investment. Both residential and non-residential construction as well as investment nachinery and equipment made good gains, particularly up to 1966. Partially reflecting high import content of heavy investment in machinery and equipment and the impact he Canada–United States Agreement on Automotive Products, the growth of imports paced the increase in total final demand over most of the 1961-69 period. Government rent expenditure on goods and services also increased significantly during the 1960s.

Even more remarkable than some of the demand-induced changes were the striking nges brought about by the technological discoveries and innovations that transformed ble production processes and opened up previously unknown areas in the fields of manuturing, transportation and communication. Newer industries, such as air transport, umed major importance in a comparatively short time; entirely new industries, such as pipelines, appeared; and a profusion of new products were created, such as the petro-



ting into place the top section of a 238-foot propylene refining column, part of a $5,500,000 expan- to a Montreal East petrochemicals complex. The new facilities, to be completed in mid-1971, will permit the refining of propylene at rates in excess of 100,000,000 lb. annually.

chemicals of the chemicals industry and the television and other electronic products of telecommunication equipment industry. As was to be expected, the industries in a posit to benefit from such innovations were among the most rapidly expanding in the econo although the impact of the expansion spread through the entire economic system. changes in production and demand also influenced the level of employment in the vari industries; there was a considerable shift in employment during the postwar period f the goods-producing to the service-producing industries and most of the loss in the for took place in agriculture.

12.—Quantity Indexes of Real Domestic Product at Factor Cost, by Industry of Origin, 1954-69

(1961=100)

Industry	1954	1955	1956	1957	1958	1959	1960	19
Agriculture	93.1	114.9	122.0	102.6	113.8	110.2	115.3	100
Forestry	89.7	94.8	100.1	91.1	80.7	91.2	104.4	100
Fishing and trapping	104.2	98.0	103.5	97.9	109.3	98.1	95.1	100
Mines (incl. milling), quarries and oil wells	56.1	66.4	77.1	84.6	86.0	97.3	97.4	100
Manufacturing	74.9	82.2	89.9	89.7	88.0	94.5	96.1	100
Construction	73.7	81.9	92.2	100.2	103.7	98.7	97.0	100
Electric power, gas and water utilities	51.1	57.9	64.6	69.5	76.3	86.6	94.4	100
Transportation, storage and communication	68.8	78.1	87.1	87.4	84.4	91.2	93.9	100
Trade	73.4	81.8	89.2	89.2	91.3	97.4	97.6	100
Finance, insurance and real estate	[1]	[1]	[1]	[1]	[1]	[1]	[1]	100
Community, business and personal service	75.8	77.7	82.4	85.0	88.2	93.0	96.7	100
Public administration and defence	[1]	[1]	[1]	[1]	[1]	[1]	[1]	100
Real Domestic Product	**74.3**	**82.1**	**89.1**	**89.5**	**91.0**	**95.7**	**98.0**	**100**

Industry	1962	1963	1964	1965	1966	1967	1968	19
Agriculture	122.0	136.9	123.9	127.6	145.9	118.6	125.1	131.
Forestry	106.4	108.3	119.2	122.5	132.7	130.3	131.2	136.
Fishing and trapping	106.9	106.4	108.9	106.6	118.2	112.1	126.1	112.
Mines (incl. milling), quarries and oil wells	106.2	112.1	126.0	131.9	134.2	142.1	150.0	149.
Manufacturing	109.0	116.2	127.4	138.8	148.7	152.3	161.1	168.
Construction	105.6	107.1	117.4	131.6	141.7	141.2	150.6	154.
Electric power, gas and water utilities	105.3	111.6	120.8	129.9	141.4	151.2	162.8	177.
Transportation, storage and communication	104.1	111.1	120.3	127.6	138.0	145.3	153.0	161.
Trade	106.1	111.2	119.5	129.4	137.6	144.7	150.7	157.
Finance, insurance and real estate	105.5	110.5	115.0	120.8	125.6	131.4	135.6	143.
Community, business and personal service	105.4	110.9	119.0	128.8	140.4	150.4	156.9	166.
Public administration and defence	103.1	104.0	106.3	108.3	112.2	118.2	121.0	123.
Real Domestic Product	**106.9**	**112.7**	**120.4**	**129.0**	**138.0**	**142.4**	**149.3**	**156.**

[1] No data are available prior to 1961 on a 1961 base due to a break in historical continuity resulting from implementation of the 1960 standard industrial classification and the 1961 weight and reference base for the inde

Although all the major industry groups expanded, development was not unifo throughout the postwar period. For example, there was a marked and fairly gene acceleration in output growth in Canada during the 1960s. Despite some deceleration the later years of that decade, total real domestic product grew at a rate of 5.8 p.c. in t 1961-69 period. In contrast, the average rate of growth in real domestic product for t 1946-61 period was 4.7 p.c. per annum. Three important types of factors affecting t expansionary paths of industries were in evidence at some point during the period. T first may be described as some special factor at work in a particular industry, the effe of which would be most noticeable in that industry—for example, the demand for urani which had an important influence on the mining industry during the latter half of the 195

ne opening up of new mineral resources such as the iron ore mines in Quebec–Labrador, nd certain technological innovations such as the development of synthetic materials or elevision. The second type of factor is much more general in its effects and in its causes. uch factors as increased demand for consumer goods resulting from a rising standard of ving and a growing population, shifts in world trading patterns or shortages causing in- eased demand for export goods, the surge of investment activity associated with replace- ent cycles, as well as attempts to broaden the base of economic activity through invest- ent in research, social overhead capital, education, improved management and marketing chniques, or a more efficient production process (or a confluence of all these factors) appear lie at the root of such postwar expansions as the investment boom of the mid-1950s or ne expansion in production since 1961. The third type of factor would be some unique nd far-reaching event, of which the Korean War might serve as a conspicuous example.

All three factors, jointly or in turn, have reacted on the various industries to result in ne upswings in aggregate production. The percentage growth of each of the main in- ustrial groups in the 1946-69 period was as follows:—

Industry	*Growth*
	p.c.
Agriculture	1.5
Forestry	2.5
Fishing and trapping	1.4
Mines (incl. milling), quarries and oil wells	8.2
Manufacturing	5.1
Construction	6.0
Electric power, gas and water utilities	8.9
Transportation, storage and communication	4.9
Trade	4.9
Finance, insurance and real estate	[1]
Community, business and personal service	4.7
Public administration and defence	[1]
Real Domestic Product	4.8

[1] For these industries the 1946-61 and the 1961-67 periods are not considered sufficiently comparable to have been ked following conversion to the 1960 standard industrial classification and the 1961 weight and reference base—see *dexes of Real Domestic Product by Industry, 1961 Base*, Appendix I (Catalogue No. 61-506). The 1961-69 growth rate Finance, insurance and real estate was 4.5 p.c. and for Public administration and defence 2.8 p.c.; the 1946-61 rates ere 5.0 p.c. and 4.6 p.c., respectively.

Foremost in growth was the electric power and gas utilities industry, followed by the ining and construction industries. All three were strongly affected by technological dvances, new discoveries and a fairly well sustained demand for their products. The emand in mining frequently came from abroad, resulting in relatively high export sales and oviding incentive for the opening up and developing of new mineral resource areas. me slackening in construction activity was evident following the unusually high levels ached during the mid-1950s but since 1963 the swing has again been upward, although ere was some flattening from the latter part of 1966.

Over the period as a whole, most of the other industry divisions (except agriculture, restry and fishing and trapping) expanded at roughly the same average rate of about 5 p.c. anufacturing, trade, and transportation, storage and communication industry divisions, hich together accounted for almost one half of the total output, also showed strikingly milar cyclical patterns. Within manufacturing it was the durables component that panded particularly rapidly during the cyclical upturns and that benefited from the need r machinery and equipment in the periods of heavy investment and from increased nsumer demand for such products as motor vehicles and electrical appliances during the 61-69 period. Non-durables maintained a fairly steady rate of expansion for most of e postwar period, largely in response to increased population and demand for industrial aterials. A similar pattern was observable in trade, with retail trade exhibiting a rela- vely smooth expansionary trend.

The community, recreation, business and personal service industry division w relatively insensitive both to cyclical and irregular influences but, along with some oth steadily expanding industries such as finance, insurance and real estate, non-durables an retail trade, it helped to sustain aggregate production and growth during periods of contra tion and expansion. Although this division as a whole showed an average rate of growt for the 1946-69 period, some of its components, such as business services and educatio were among the most rapidly expanding in the economy. During the 1960s, this resulte in a marked acceleration of the rate of expansion of the division, i.e., from 3.8 p.c. in 1946-6 to 6.9 p.c. in 1961-69.

The rates of growth in the forestry, agriculture, and fishing and trapping divisio were below average and were subject to pronounced irregular fluctuations in output– forestry because of the nature of its production processes and also, to some extent, becaus of its sensitivity to changes in world demand and price; agriculture because of marke year-to-year differences in output more often caused by weather conditions and simil factors than by changes in prices and demand conditions; and fisheries because of i dependence on the vagaries of nature.

Production of Goods-Producing Industries

The data contained in the tables under this heading are published in the DBS repo *Survey of Production*.* The scope of the survey of production is limited to industri engaged chiefly in the production of goods and it measures production in current dollar This is in contrast to the real domestic product series (p. 1184) which encompasses a industries and measures production in terms of the dollars of a base year.

Tables 13 and 14 give "census value added" production data, classified by provinc and industry, respectively. Census value added is derived by deducting the cost materials from the gross value (exclusive of excise and other sales taxes) of shipment (adjusted for change in inventory of finished goods and goods-in-process) or revenue. Th figures include interim classification and valuation changes in mining, manufacturing an forestry brought about by the adoption of the 1960 standard industrial classification establishments. However, the three industry aggregates continue to consist of censu value added accruing from their primary activity only.* Standard industrial classificatio changes have not yet been implemented for other industries.

* DBS Catalogue No. 61-202. See Appendix of the 1968 issue for census value added in mining, manufacturin and forestry on an all-activities basis.

13.—Census Value Added for Goods-Producing Industries, by Province, 1965-68

Province or Territory	1965		1966		1967		1968p	
	$'000	p.c.	$'000	p.c.	$'000	p.c.	$'000	p.c.
Newfoundland	333,731	1.3	419,883	1.4	414,580	1.4	459,848	1.4
Prince Edward Island	64,357	0.3	72,297	0.3	60,384	0.2	66,168	0.2
Nova Scotia	487,306	1.9	542,953	1.9	552,596	1.9	589,254	1.9
New Brunswick	439,321	1.7	472,618	1.6	472,045	1.6	514,763	1.6
Quebec	6,463,694	25.0	7,136,277	24.5	7,268,234	24.4	7,685,446	24.2
Ontario	10,835,837	41.9	12,125,120	41.7	12,732,097	42.6	13,560,403	42.6
Manitoba	962,342	3.7	1,030,587	3.5	1,075,317	3.6	1,178,207	3.7
Saskatchewan	1,433,995	5.6	1,793,085	6.2	1,436,782	4.8	1,472,789	4.6
Alberta	2,227,321	8.6	2,603,426	8.9	2,723,369	9.1	2,966,574	9.3
British Columbia	2,530,289	9.8	2,840,262	9.8	3,048,008	10.2	3,244,283	10.2
Yukon and Northwest Territories	58,896	0.2	64,698	0.2	66,124	0.2	81,152	0.3
Canada	**25,837,089**	**100.0**	**29,101,208**	**100.0**	**29,849,533**	**100.0**	**31,818,888**	**100.0**

14.—Census Value Added for Goods-Producing Industries, by Province and Industry, 1968

Industry	Newfoundland		Prince Edward Island		Nova Scotia		New Brunswick	
	$'000	p.c.	$'000	p.c.	$'000	p.c.	$'000	p.c.
riculture	..	..	21,086	31.9	34,574	5.9	29,769	5.8
restry	18,325	4.0	—	—	8,307	1.4	36,264	7.1
heries	28,841	6.3	8,567	12.9	54,602	9.3	15,654	3.0
apping	91	--	2	--	128	--	134	--
ningp	161,002	35.0	—	—	29,931	5.1	38,812	7.5
ctric power	28,724	6.3	4,085	6.2	38,508	6.5	37,484	7.3
nufacturingp	88,429	19.2	16,569	25.0	262,483	44.5	242,083	47.0
nstruction	134,436	29.2	15,859	24.0	160,721	27.3	114,564	22.3
Totals	**459,848**[1]	**100.0**[1]	**66,168**	**100.0**	**589,254**	**100.0**	**514,763**	**100.0**

	Quebec		Ontario		Manitoba		Saskatchewan	
	$'000	p.c.	$'000	p.c.	$'000	p.c.	$'000	p.c.
riculture	367,053	4.8	767,262	5.7	271,748	23.1	644,581	43.8
restry	166,327	2.2	111,414	0.8	2,111	0.2	5,097	0.3
heries	8,648	0.1	5,968	0.1	3,276	0.3	1,382	0.1
apping	1,932	--	3,354	--	1,601	0.1	1,551	0.1
ningp	439,238	5.7	722,991	5.3	113,526	9.6	300,136	20.4
ctric power	417,286	5.4	470,507	3.5	62,717	5.3	59,436	4.0
nufacturingp	5,214,227	67.9	9,633,338	71.0	442,994	37.6	169,928	11.6
nstruction	1,070,735	13.9	1,845,569	13.6	280,234	23.8	290,678	19.7
Totals	**7,685,446**	**100.0**	**13,560,403**	**100.0**	**1,178,207**	**100.0**	**1,472,789**	**100.0**

	Alberta		British Columbia		Yukon and Northwest Territories		Canada	
	$'000	p.c.	$'000	p.c.	$'000	p.c.	$'000	p.c.
iculture	581,468	19.6	146,759	4.5	..	..	2,864,300	9.0
estry	6,348	0.2	370,525	11.4	44	0.1	724,761	2.3
heries	917	--	57,274	1.8	781	1.0	185,910	0.6
pping	1,730	0.1	806	--	840	1.0	12,170	--
ingp	1,019,726	34.4	253,681	7.8	71,594	88.2	3,150,636	9.9
ctric power	85,133	2.9	150,108	4.7	5,763	7.1	1,359,751	4.3
ufacturingp	606,032	20.4	1,574,262	48.5	2,130	2.6	18,252,475	57.4
struction	665,220	22.4	690,869[2]	21.3[2]	[3]	[3]	5,268,885	16.5
Totals	**2,966,574**	**100.0**	**3,244,283**	**100.0**	**81,152**[1]	**100.0**[1]	**31,818,888**	**100.0**

[1] Excludes agriculture.

[2] Includes the Yukon and Northwest Territories.

[3] Included with British Columbia.

Section 3.—Aggregate Productivity Trends

Increasing interest in questions of economic growth, cost-structure and internatio competitiveness, and in the relationships between output, employment, earnings and pri has focused attention on productivity as a framework within which such problems c usefully be discussed. Recognizing this interest, the Dominion Bureau of Statistics n publishes annual indexes of output per person employed and per man-hour in Cana covering the commercial industries as a whole, with separate detail for agriculture and t commercial non-agricultural industries, manufacturing and the residual commercial no manufacturing industries. Similar indexes are also published for the total and non-ag cultural commercial goods-producing industries, and the commercial service-produci industries of the same aggregate.*

Although these measures relate output to a single input only, namely labour time, th do not measure the exclusive contribution of labour to output. Changes in indexes output per unit of labour input reflect the combined influence of a number of separate b interrelated factors such as the amount and quality of capital equipment, the extent utilization of available capacity, managerial efficiency and the impact of technologi progress, as well as the skill and effort of the work force.

Sources of Data.—The output components of the various indexes of output p unit of labour input referred to here are the historical indexes of "real domestic produ (RDP) by industry", described in Section 2, p. 1184. These indexes, which were develop within the conceptual framework of the national accounts and which measure in consta dollar terms the unduplicated contribution of each component industry to total outpu are considered basically suitable for productivity measurement when matched with t corresponding input measures.

The major sources for the employment and man-hour indexes were the monthly labo force and employment surveys, and these were supplemented by data from such sources the annual censuses of manufactures and mining and the decennial census of populati Since the data from these diverse sources varied considerably in their coverage, concep and methods of compilation, care had to be exercised in their selection, adaptation an combination into aggregate measures of labour input which would be conceptually an statistically consistent, both internally and in relation to the output data. Labour for survey data were used for the paid worker estimates of agriculture and of fishing an trapping, while those for manufacturing and mining were based on adjusted annual cens data. Estimates for most of the remaining industry divisions were derived from adjust employment survey data. Estimates of other than paid workers (own-account worke employers and unpaid family workers) were derived mainly from the labour force surve The estimates of average hours worked, which were needed for the indexes of output p man-hour, were also based on labour force survey data, except in the case of manufacturin where estimates of man-hours paid from the census of manufactures were adjusted to t man-hours worked concept.

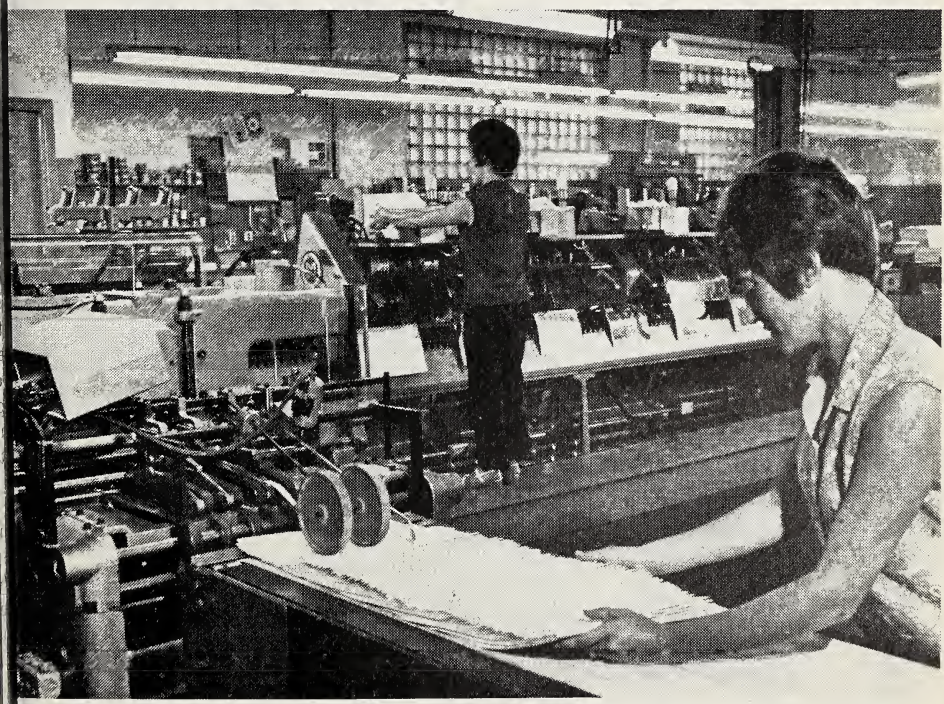
Growth Rates.—Output per person employed in the commercial non-agricultu industries grew at an average annual rate of 2.8 p.c. between 1946 and 1969. Because the decline in average hours worked per person, this was a lower rate of growth than th of output per man-hour which, during the same period, increased by 3.3 p.c. per annu Corresponding figures for manufacturing were 3.7 p.c. and 4.0 p.c. and those for the residu non-manufacturing industries of the commercial non-agricultural sector were 2.4 p.c. an 3.0 p.c., respectively.

* See DBS Reference Paper *Indexes of Output per Person Employed and per Man-Hour in Canada, Commerc Non-agricultural Industries, 1947-63* (Catalogue No. 14-501) and *Aggregate Productivity Trends, 1946-69* (Catalo No. 14-201).

In agriculture, the average annual rates of growth of output per person employed and er man-hour between 1946 and 1969 were 5.2 p.c. and 5.5 p.c., respectively. However, n view of the difficulties of measuring the number and especially the man-hours of persons mployed in agriculture, data presented for this industry division should be regarded as pproximate. In the commercial industries as a whole, output per person employed in- reased between 1946 and 1969 at an average annual rate of 3.4 p.c., and output per man- our increased by 4.2 p.c. per annum. Corresponding figures for the total commercial oods-producing industries were 5.0 p.c. and 5.6 p.c., respectively, per annum; for the ommercial non-agricultural goods-producing industries, 4.2 p.c. and 4.5 p.c.; and for the ommercial service-producing industries, 1.4 p.c. and 2.1 p.c.

Inter-industry Shift Effects.—In addition to measuring the changes in productivity ithin the component industries, the aggregate productivity indexes measure the effect of ifts in employment and production between industries having different levels of produc- vity. One of the most significant such shifts within the commercial industries of Canada uring the postwar years was from agriculture to the non-agricultural industries, where a igher level of output per unit of labour input prevails. The effect of this shift can be easured in various ways and a number of alternative calculations have been carried out r the 1946-65 annual publication,* all of which confirm, to a greater or lesser extent, at the decline in the relative importance of agriculture made a positive contribution to e total increase in output per person employed in the commercial industries during the ostwar period.

* DBS Catalogue No. 14-201.



oduction of printed matter has undergone great change in the past few years and investment in expensive, gh-speed, efficient machinery is necessary to keep a plant competitive. This new machine in an Ottawa printing plant automatically assembles, stitches and trims publications of all sizes.

15.—Indexes of Output per Person Employed and Output per Man-Hour, 1946-69

(1961=100)

Year	Output	Persons Employed	Man-Hours	Output per Person Employed	Output per Man-Hou
	Commercial Industries				
1946	51.6	84.5	95.1	61.1	54.2
1947	55.0	88.5	97.3	62.2	56.5
1948	57.0	90.1	99.1	63.2	57.5
1949	58.5	91.4	99.7	64.0	58.7
1950	62.7	91.4	97.8	68.6	64.1
1951	67.5	93.7	99.4	72.0	67.9
1952	72.5	94.6	100.0	76.6	72.5
1953	75.5	95.1	100.3	79.4	75.3
1954	73.8	94.4	99.3	78.2	74.3
1955	82.1	95.7	99.7	85.8	82.3
1956	89.5	99.5	103.5	89.9	86.5
1957	89.7	101.3	104.1	88.6	86.1
1958	91.0	98.4	100.5	92.4	90.6
1959	95.9	100.1	102.0	95.8	94.0
1960	98.0	99.6	100.8	98.4	97.2
1961	100.0	100.0	100.0	100.0	100.0
1962	107.3	102.2	102.0	105.0	105.2
1963	113.5	104.2	103.2	109.0	110.0
1964	121.5	107.8	106.2	112.7	114.4
1965	130.5	112.3	109.8	116.2	118.9
1966	139.6	116.1	112.1	120.2	124.5
1967	143.2	118.4	113.7	121.0	126.0
1968	150.4	118.8	112.6	126.6	133.6
1969	157.4	123.3	115.3	127.6	136.5
Annual trend rate of change....p.c.	4.9	1.4	0.7	3.4	4.2
	Commercial Goods-Producing Industries				
1946	51.0	103.5	116.3	49.3	43.9
1947	54.0	106.3	115.9	50.8	46.6
1948	56.8	107.0	116.7	53.1	48.7
1949	57.8	107.9	116.8	53.6	49.5
1950	62.6	107.0	113.7	58.5	55.0
1951	68.6	109.0	115.1	63.0	59.6
1952	74.5	108.2	113.9	68.9	65.4
1953	77.4	107.6	113.9	72.0	68.0
1954	73.9	105.5	111.3	70.0	66.4
1955	83.7	105.7	110.5	79.2	75.7
1956	91.9	108.5	113.0	84.7	81.3
1957	91.0	108.1	111.0	84.2	82.0
1958	92.4	102.4	104.4	90.3	88.5
1959	96.8	103.1	105.1	93.9	92.1
1960	99.0	101.2	102.5	97.8	96.6
1961	100.0	100.0	100.0	100.0	100.0
1962	109.3	101.3	101.5	107.9	107.6
1963	116.1	102.3	101.8	113.5	114.0
1964	124.9	105.0	103.9	119.0	120.2
1965	134.9	108.1	106.2	124.8	127.0
1966	145.0	110.1	107.5	131.7	134.9
1967	145.6	110.4	106.9	131.9	136.2
1968	154.1	109.2	104.8	141.1	147.0
1969	160.3	111.2	105.1	144.1	152.5
Annual trend rate of change....p.c.	5.0	—	−0.6	5.0	5.6
	Commercial Service-Producing Industries				
1946	51.8	61.3	68.4	84.5	75.8
1947	55.8	66.6	73.6	83.7	75.9
1948	56.9	69.4	76.6	82.0	74.3
1949	59.1	71.3	78.0	82.9	75.7
1950	62.2	72.4	77.6	85.9	80.2
1951	65.7	75.1	79.6	87.5	82.5
1952	69.4	78.0	82.4	89.0	84.3
1953	72.4	79.9	83.2	90.6	87.0
1954	73.3	81.0	84.1	90.5	87.1
1955	79.4	83.4	86.0	95.2	92.3
1956	85.6	88.6	91.5	96.6	93.6

15.—Indexes of Output per Person Employed and Output per Man-Hour, 1946-69—continued

Year	Output	Persons Employed	Man-Hours	Output per Person Employed	Output per Man-Hour
	COMMERCIAL SERVICE-PRODUCING INDUSTRIES—concluded				
1957	87.6	93.1	95.6	94.1	91.7
1958	88.7	93.5	95.4	94.9	93.0
1959	94.1	96.4	98.0	97.6	96.0
1960	96.3	97.7	98.7	98.5	97.6
1961	100.0	100.0	100.0	100.0	100.0
1962	105.1	103.4	102.7	101.7	102.3
1963	110.7	106.6	105.1	103.9	105.4
1964	117.9	111.5	109.3	105.8	107.9
1965	125.9	117.7	114.5	106.9	109.9
1966	133.9	123.8	118.2	108.2	113.3
1967	140.8	128.6	122.8	109.5	114.7
1968	146.3	131.1	123.0	111.6	118.9
1969	154.2	138.7	128.8	111.1	119.7
Annual trend rate of change....p.c.	4.7	3.3	2.6	1.4	2.1
	AGRICULTURE				
1946	95.0	175.9	181.9	54.0	52.2
1947	89.2	166.4	166.1	53.6	53.7
1948	92.1	162.5	163.5	56.7	56.3
1949	86.8	160.8	162.3	54.0	53.5
1950	94.9	151.0	148.9	62.9	63.7
1951	108.3	139.2	139.8	77.8	77.5
1952	132.6	132.2	134.0	100.3	98.9
1953	121.2	127.3	131.7	95.2	92.0
1954	93.1	130.2	136.1	71.5	68.4
1955	114.9	121.5	127.3	94.5	90.3
1956	122.0	115.1	121.5	106.0	100.4
1957	102.6	110.3	115.0	93.0	89.2
1958	113.8	105.6	108.3	107.7	105.1
1959	110.2	102.6	104.9	107.4	105.0
1960	115.3	100.2	102.1	115.1	112.9
1961	100.0	100.0	100.0	100.0	100.0
1962	122.0	96.9	96.3	125.9	126.7
1963	136.9	95.3	93.5	143.7	146.4
1964	123.9	92.5	89.4	133.9	138.6
1965	127.6	87.2	83.3	146.3	153.2
1966	145.9	79.9	77.5	182.6	188.2
1967	118.6	82.1	78.5	144.5	151.1
1968	125.1	80.2	75.2	156.0	166.3
1969	131.0	78.6	74.2	166.7	176.5
Annual trend rate of change....p.c.	1.5	−3.5	−3.8	5.2	5.5
	COMMERCIAL NON-AGRICULTURAL INDUSTRIES				
1946	47.9	69.7	76.2	68.7	62.8
1947	52.1	75.9	82.3	68.7	63.3
1948	54.0	78.4	85.0	68.9	63.5
1949	56.1	80.2	86.0	70.0	65.2
1950	59.9	81.8	86.6	73.2	69.2
1951	64.0	86.4	90.7	74.1	70.6
1952	67.4	88.5	92.6	76.1	72.8
1953	71.5	89.9	93.5	79.5	76.4
1954	72.2	88.7	91.3	81.4	79.0
1955	79.3	91.5	93.7	86.7	84.6
1956	86.8	97.0	99.6	89.5	87.1
1957	88.6	99.8	101.8	88.7	87.0
1958	89.1	97.3	98.8	91.6	90.2
1959	94.7	99.7	101.3	95.0	93.5
1960	96.5	99.6	100.6	96.9	96.0
1961	100.0	100.0	100.0	100.0	100.0
1962	106.4	103.1	103.3	103.2	103.0
1963	112.2	105.7	105.4	106.2	106.5
1964	121.4	110.4	110.0	110.0	110.4

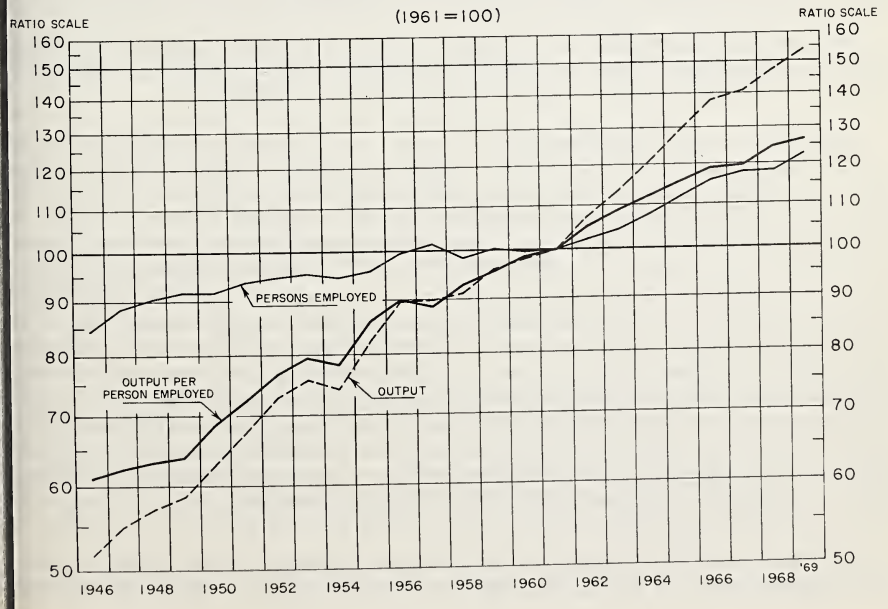
15.—Indexes of Output per Person Employed and Output per Man-Hour, 1946-69— continued

Year	Output	Persons Employed	Man-Hours	Output per Person Employed	Output per Man-Hour
	COMMERCIAL NON-AGRICULTURAL INDUSTRIES—concluded				
1965	130.7	116.5	115.7	112.1	112.9
1966	139.3	122.2	119.9	114.0	116.2
1967	144.6	124.5	121.6	116.2	118.9
1968	151.8	125.3	121.0	121.2	125.5
1969	158.8	130.8	124.5	121.4	127.5
Annual trend rate of change....p.c.	5.2	2.4	1.8	2.8	3.3
	COMMERCIAL NON-AGRICULTURAL GOODS-PRODUCING INDUSTRIES				
1946	44.1	78.9	85.3	55.9	51.7
1947	48.5	85.9	92.3	56.5	52.5
1948	51.3	88.2	94.8	58.2	54.1
1949	53.3	89.9	95.3	59.3	55.9
1950	57.6	92.1	97.1	62.6	59.3
1951	62.4	98.7	103.5	63.3	60.3
1952	65.5	100.0	104.4	65.5	62.7
1953	70.6	100.8	105.5	70.0	66.9
1954	71.0	97.0	99.6	73.2	71.3
1955	78.8	100.4	102.7	78.5	76.7
1956	87.3	106.3	109.1	82.1	80.0
1957	89.2	107.3	109.1	83.1	81.8
1958	89.1	101.3	102.7	88.0	86.8
1959	94.8	103.3	105.2	91.7	90.1
1960	96.5	101.6	102.8	95.0	93.9
1961	100.0	100.0	100.0	100.0	100.0
1962	107.8	102.8	104.1	104.8	103.6
1963	113.7	104.7	105.8	108.6	107.5
1964	125.0	109.3	110.8	114.4	112.8
1965	135.7	115.3	117.0	117.7	115.9
1966	144.9	120.5	121.7	120.2	119.0
1967	148.7	120.1	120.3	123.8	123.6
1968	157.4	119.2	118.8	132.1	132.5
1969	163.7	122.5	119.8	133.6	136.7
Annual trend rate of change....p.c.	5.7	1.5	1.1	4.2	4.5
	MANUFACTURING				
1946	50.7	82.5	89.7	61.4	56.5
1947	55.4	88.3	94.9	62.8	58.4
1948	57.8	90.2	97.4	64.1	59.3
1949	59.5	91.6	97.1	65.0	61.3
1950	63.4	92.5	97.2	68.5	65.3
1951	68.9	98.2	101.2	70.2	68.1
1952	71.5	100.5	102.6	71.1	69.7
1953	76.6	103.6	106.2	74.0	72.1
1954	74.9	99.0	99.7	75.7	75.2
1955	82.2	101.4	102.6	81.1	80.1
1956	89.9	105.6	107.6	85.1	83.5
1957	89.7	106.1	106.8	84.5	84.0
1958	88.0	100.6	101.3	87.4	86.9
1959	94.5	101.8	103.1	92.8	91.6
1960	96.1	100.8	101.3	95.3	94.8
1961	100.0	100.0	100.0	100.0	100.0
1962	109.0	102.7	103.8	106.1	105.0
1963	116.2	105.2	106.7	110.4	108.9
1964	127.4	110.0	112.0	115.8	113.7
1965	138.8	115.7	117.7	119.9	117.9
1966	148.7	121.2	122.4	122.7	121.5
1967	152.3	121.7	122.1	125.2	124.8
1968	161.1	120.7	121.1	133.4	133.1
1969	168.4	124.1	122.2	135.6	137.8
Annual trend rate of change....p.c.	5.1	1.4	1.1	3.7	4.0

15.—Indexes of Output per Person Employed and Output per Man-Hour, 1946-69—concluded

Year	Output	Persons Employed	Man-Hours	Output per Person Employed	Output per Man-Hour
	Non-manufacturing Industries (Commercial Non-agricultural)				
46	46.6	64.6	71.2	72.2	65.4
47	50.6	70.9	77.6	71.3	65.2
48	52.3	73.7	80.4	70.9	65.0
49	54.6	75.7	82.0	72.1	66.6
50	58.3	77.4	82.6	75.4	70.6
51	61.8	81.4	86.6	75.9	71.4
52	65.6	83.4	88.7	78.6	73.9
53	69.2	84.0	88.5	82.4	78.2
54	71.0	84.2	88.0	84.3	80.7
55	78.0	87.2	90.2	89.4	86.5
56	85.4	93.3	96.4	91.5	88.6
57	88.1	97.2	99.9	90.6	88.2
58	89.6	95.8	97.7	93.6	91.7
59	94.8	98.7	100.6	96.0	94.2
60	96.7	99.2	100.4	97.5	96.3
61	100.0	100.0	100.0	100.0	100.0
62	105.2	103.3	103.2	101.8	102.0
63	110.4	105.9	104.8	104.3	105.4
64	118.7	110.6	109.0	107.3	108.9
65	127.1	117.0	114.8	108.7	110.7
66	135.1	122.7	118.7	110.1	113.8
67	141.2	125.9	121.3	112.2	116.4
68	147.7	127.6	121.0	115.8	122.1
69	154.5	134.2	125.6	115.1	123.0
nual trend rate of change....p.c.	5.3	2.8	2.2	2.4	3.0

INDEXES OF OUTPUT PER PERSON EMPLOYED, COMMERCIAL INDUSTRIES, 1946–69



Section 4.—Canadian Balance of International Payments

The Canadian balance of international payments is a measure of the flow of goods services and capital between Canada and the rest of the world. It is normal practice allocate flows within three major accounts—current, capital and international reserves.

Merchandise trade, consisting of imports and exports, comprises a very significant ite in the current account section both in magnitude and in its over-all economic impact Canada. Although with decreasing emphasis in recent years, a favourable balance trade has long been regarded by many countries as a measure of economic strength. I recent years, Canada has been successful in achieving a merchandise trade surplus but tl increasing outflow of Canadian dollars in the form of interest and dividends (as foreig investment in Canada has risen), the cash requirements of Canadians travelling outsic Canada, the heavy freight and shipping expenses incurred in the transport of Canadia imports, and the official contributions to developing countries have assisted in creating heavy imbalance in the area termed "invisibles". Canada, of course, is the recipient of sul stantial revenues from invisibles, including among other items immigrants' cash resource returns on foreign investments, travel expenditures by foreigners accruing to Canadian and freight receipts.

The capital account includes the flows associated with long-term and short-term in vestment in the Canadian economy together with Canadian investment in foreign countrie Through the years, confidence in the Canadian market by foreign investors has encourage them to make significant purchases of long-term Canadian securities. On a yearly basis these investments have exceeded both Canadian investment abroad and the relinquishmen of investments in Canada by non-residents. In addition to heavy and sustained purchase of new security issues of governments, railways, utilities and other corporations, sizabl investments have been made by non-residents in corporations in which the investor acquire some degree of control.

Short-term capital flows are complex and extremely volatile. Accounts receivabl and payable of resident Canadian corporations with non-residents, holdings of foreign ban balances by Canadians and, similarly, Canadian dollar deposits of non-residents in Canad are some of the accounts for which flows are consolidated in the short-term capital secto

More detailed information on the structure of the Canadian balance of internationa payments is obtainable from the various publications produced by the Balance of Payment and Financial Flows Division of DBS, in particular the annual reports.

Summary of 1969 Transactions.—In a year of continuing expansion, resulting in more than 9-p.c. gain in the value of the nation's output, there was a sharp rise in inter national transactions in goods and services both demanded and supplied by Canada. Th total value of goods and services imported rose 14 p.c. and exports advanced 10 p.c. Re flecting these differing rates of growth in imports and exports, the current account defici in 1969 rose to $751,000,000, some $644,000,000 above the 1968 level. The major factor i this change was the $515,000,000 reduction in the merchandise trade surplus to $860,000,000 The export pattern was severely distorted by the curtailment of supplies from strike-boun industries and continued difficulties were also experienced in the marketing of commoditie such as wheat. Exchange rate changes for the deutschemark and French franc made i the second half of the year did not appear to have had any noticeable impact on Canadia trading patterns. As an anti-inflationary measure, the timing of tariff reductions under th Kennedy Round was accelerated by the Canadian Government and reductions introduce in mid-year had competitive effects for the products of certain industries. Non-merchan dise transactions led to a larger deficit of $1,611,000,000, principally due to increased ne disbursements on the travel account.

Inflows of capital in long-term forms increased by $603,000,000 to $2,257,000,000, a new Canadian issues sold to non-residents rose by $150,000,000 to exceed $2,000,000,00

the first time. Resort to foreign borrowing on this scale reflected the extreme tightness the availability of domestic funds and relatively lower interest rates prevailing abroad. e main factor in the increased inflow was, however, the swing in foreign security trans- ions from an outflow of $467,000,000 in 1968 to an inflow of $106,000,000 in 1969, as nadian investors, particularly institutions, adjusted their holdings in the light of their er-all portfolio requirements and current market conditions. Short-term capital out- ws rose by $243,000,000 to reach $1,441,000,000. Increases in Canadian holdings of nk balances and other short-term funds abroad produced an outflow of $1,604,000,000, interest rates in the Euro-dollar market rose appreciably above short-term rates in nada.

Canada's net official monetary assets increased by $65,000,000 over the year. Quar- ly fluctuations in these assets were not nearly as volatile in 1969 as in the previous year en the Canadian dollar came under speculative attack. Speculative interest centred re on the role of gold and the strengths of the deutschemark, French franc and sterling. the end of the year conditions in foreign exchange markets generally were settled, aiting the introduction of the Special Drawing Rights system of the International Mone- y Fund on Jan. 1, 1970.

Current Account Transactions.—Based on generally strong demand conditions in United States and in Canada, which persisted in the face of severe anti-inflationary asures, merchandise trade continued to expand in 1969. World trade rose sharply during year and Canadian exports and imports advanced at a pace more or less in line with this elopment, the former increasing 10 p.c. to $14,874,000,000, and the latter, 15 p.c. to ,014,000,000. A significant part of the increased levels reflected price rises. The export wth rate, which fell below that of imports, contrasted with the 1968 performance when orts rose much the faster. As a result of the slowdown in the growth of exports and eased growth of imports, the merchandise trade surplus fell by about $515,000,000 to 0,000,000. Except for 1968, however, this surplus was the highest recorded since the ond World War.

A combination of factors contributed to this change. In 1969, exports of metals tended low down due to the return to a more usual demand pattern following the settlement of our problems in the United States in 1968; moreover, supplies for export markets suffered ause of prolonged strikes in the Canadian iron, steel, nickel and copper industries in 9. Sales of wheat continued to decline, reflecting increased production in importing ntries and world oversupply. To meet the increasing competition which had driven es below the International Grains Arrangement minimum, Canadian wheat prices were uced in the second quarter of 1969. While there was a decline in the relative share of orts of crude materials from about 19 p.c. in 1968 to 17 p.c. in 1969, the share of end ducts rose by nearly five percentage points to about 37 p.c. of total domestic exports. st of the advance in exports consisted of increased sales of automotive products but stantial increases were also recorded for lumber, wood pulp, newsprint, petroleum and ious items of equipment. There were, however, significant reductions in exports of iron nickel and copper.

On the imports side, the high level of demand in Canada, the disruptive effects of our disputes on domestic supplies, the improvement in the export capability of Canada's pliers of imports and the continuing effects of industrial rationalization particularly in automobile industry gave new impetus to the upward trend in imports. The accelera- of the Kennedy Round tariff cuts introduced by the Canadian Government about middle of 1969 to increase price competition and help check inflationary price rises was a factor. Imports of automotive products increased briskly, although less than exports hese commodities. Increases were general but the more notable occurred in meat, raw ar, petroleum, chemicals, fabricated iron and steel, copper, nickel and machinery.

In 1969, there was a deficit of $1,611,000,000 on non-merchandise transactions, an ease of $129,000,000 over the 1968 deficit. Total receipts rose 15 p.c. to $4,221,000,000

and total payments went up about 11 p.c. to $5,832,000,000. The rise in the deficit o non-merchandise transactions was due principally to higher net disbursements on th travel account of $218,000,000 in 1969. Besides such factors as the increase in the numb of residents travelling abroad and a rise in their average expenditures, higher travel paymen to non-residents in 1969 also occurred as a result of the increased patronage by Canadia of foreign airlines during the Air Canada strike in the second quarter of the year. Risi prices in most of the major tourist centres were also a factor in the higher spending leve recorded in 1969.

16.—Current Account Transactions Between Canada and All Countries, 1950-69

(Millions of dollars)

Year	Current Receipts		Current Payments			Net Balance on Curren Account
	Merchandise	Other	Merchandise	Official Contri-butions	Other	
1950	3,139	1,148	3,132	5	1,469	— 319
1951	3,950	1,342	4,101	9	1,694	— 512
1952	4,339	1,534	3,854	16	1,816	+ 187
1953	4,152	1,587	4,212	25	1,950	— 448
1954	3,934	1,598	3,916	11	2,029	— 424
1955	4,332	1,749	4,543	24	2,201	— 687
1956	4,837	1,795	5,565	30	2,409	— 1,372
1957	4,894	1,742	5,488	40	2,559	— 1,451
1958	4,890	1,704	5,066	53	2,612	— 1,137
1959	5,151	1,725	5,572	72	2,719	— 1,487
1960	5,392	1,787	5,540	61	2,811	— 1,233
1961	5,889	1,934	5,716	56	2,979	— 928
1962	6,387	2,077	6,203	36	3,055	— 830
1963	7,082	2,230	6,579	65	3,189	— 521
1964	8,238	2,556	7,537	69	3,612	— 424
1965	8,745	2,775	8,627	93	3,930	— 1,130
1966[1]	10,326	3,070	10,102	166	4,290	— 1,162
1967	11,338	3,747	10,772	182	4,630	— 499
1968	13,537	3,647	12,162	133	4,996	— 107
1969	14,874	4,221	14,014	144	5,688	— 751

[1]From 1966, offsetting entries for mutual aid to NATO are excluded.

17.—Geographical Distribution of the Balance on Current Account Between Canada and Other Countries, 1950-69

(Millions of dollars)

Year	United States[1]	United Kingdom	Other Overseas Countries	All Countries	Year	United States[1]	United Kingdom	Other Overseas Countries	All Countr
1950	— 385	+ 24	+ 42	— 319	1960	— 1,359	+ 169	— 43	— 1,
1951	— 945	+ 223	+ 210	— 512	1961	— 1,341	+ 195	+ 218	—
1952	— 830	+ 387	+ 630	+ 187	1962	— 1,092	+ 225	+ 37	—
1953	— 907	+ 132	+ 327	— 448	1963	— 1,148	+ 417	+ 210	—
1954	— 800	+ 229	+ 147	— 424	1964	— 1,635	+ 605	+ 606	—
1955	— 1,029	+ 332	+ 10	— 687	1965	— 1,937	+ 505	+ 302	— 1,
1956	— 1,650	+ 253	+ 25	— 1,372	1966	— 2,030	+ 425	+ 443	— 1,
1957	— 1,579	+ 120	+ 8	— 1,451	1967	— 1,342	+ 512	+ 331	—
1958	— 1,167	+ 97	— 67	— 1,137	1968	— 801	+ 466	+ 228	—
1959	— 1,221	+ 16	— 282	— 1,487	1969	— 733	+ 323	— 341	—

[1]Includes all net exports of monetary gold.

Capital Movements.—The net inflow of capital into Canada almost doubled to 16,000,000 in 1969 from $456,000,000 in the previous year. Capital movements in ıg-term forms led to a net inflow of $2,257,000,000 for the year, as inflows of approxiıtely equal size occurred in each quarter while short-term transactions gave rise to outws in each quarter, totalling $1,441,000,000 in the year. Despite the large increase in the low from total capital movements in 1969, only $65,000,000 was added to Canada's icial monetary assets, as the year's current account deficit rose more sharply to 51,000,000.

Direct investment in foreign-controlled enterprises in 1969 gave rise to a moderately gher net capital inflow of $655,000,000, as sharply lower inflows from the United Kingdom re more than offset by higher investment from the United States and other countries. out 70 p.c. of the year's inflow came from the United States, and two fifths of it occurred the second quarter. By far the largest part of the inflow was allocated to the manufacring and petroleum and natural gas industries. Capital inflows for the takeover of sting Canadian enterprises, notably enterprises engaged in the manufacture of food and verages, forest products, electronics and steel, and in asbestos production, finance and insurance, were substantially higher.

The net outflow for direct investment abroad during 1969 reached a high of 55,000,000, compared with the 1968 outflow of $225,000,000. About three fifths of the 69 investment was in the United States, one fifth in Europe, and the remainder chiefly other Western Hemisphere countries.

At $1,832,000,000, the net inflow from portfolio transactions in long-term securities in 69 reached unprecedented proportions. The two main elements accounting for the size this inflow were the continued high level of sales of Canadian new issues abroad, which ceeded $2,000,000,000 for the first time, and a sharp turnaround of over $500,000,000 in ding in outstanding foreign securities. The net inflow of $106,000,000 from transactions foreign securities, after five years of successive annual outflows totalling $1,437,000,000, s largely attributable to transactions in United States equities. At a time when stockrket prices were depressed in Canada and the United States, Canadians became net lers of these securities (to the extent of $114,000,000) for the first time since 1963.

Buoyant economic conditions and exceptionally high interest rates, both in Canada d abroad, had a far-reaching impact not only on stock-market conditions but also on the rces and type of financing adopted by Canadian borrowers. Canadian interest rates, eady at very high levels at the end of 1968, continued to rise throughout 1969. In late cember, the yield on the index of 10 long-term industrial bonds produced by McLeod, ung, Weir had reached 9.29 p.c. Canadian borrowers took advantage of the relatively er rates abroad by continuing to raise large amounts of capital not only in the United tes but, for the second successive year, in Germany. (Of interest in 1969 was the entry municipalities into this market, which had been utilized almost exclusively by more senior vernments and their agencies in 1968.) Provincial governments again borrowed heavily Germany, so that total inflows from new issues of Canadian securities in continental rope rose from $491,000,000 in 1968 to $556,000,000 in 1969.

Capital movements in short-term forms in 1969 gave rise to a larger net outflow of 441,000,000 compared with $1,198,000,000 in 1968, which masked to some extent very ge opposing flows. The outflow for the acquisition by Canadians of foreign currency posits and other short-term funds abroad almost quadrupled in the year to $1,604,000,000. tially offsetting inflows resulted from increased non-resident holdings of Canadian ance company paper and other short-term obligations. A large year-to-year reduction outflows was evident in the "all other transactions" category. This account includes nges in loans and accounts receivable and payable as well as the balancing item repreting the difference between direct measurements of the current and capital accounts cluding the reserves).

Official Reserves.—Canada's net official monetary assets totalled U.S. $3,105,000,0 at Dec. 31, 1969, a rise of U.S. $60,000,000 over the year. A large increase of U. $150,000,000 in the fourth quarter more than offset the decreases that took place in t first three quarters of 1969. Total official monetary liabilities remained constant ov the year at U.S. $1,000,000. The annual change expressed in Canadian dollars showed increase in net official monetary assets of $65,000,000, all reflecting the rise in internation reserves, as changes in associated liabilities, noted above, were negligible in the yea

18.—Balance of International Payments Between Canada and All Countries, 1962-69
(Millions of dollars)

Item	1962	1963	1964	1965	1966	1967	1968	1969
Current Receipts—								
Merchandise exports (adjusted)	6,387	7,082	8,238	8,745	10,326	11,338	13,537	14,8
Mutual aid to NATO countries	41	23	47	39	18	[1]	[1]	[1]
Gold production available for export	155	154	145	138	127	112	120	1
Travel expenditures	562	609	662	747	840	1,318	978	1,0
Interest and dividends	202	230	332	322	318	295	353	4
Freight and shipping	509	563	644	668	758	830	891	9
Inheritances and immigrants' funds	124	151	169	216	268	329	370	3
All other current receipts	484	500	557	645	759	863	935	1,3
Totals, Current Receipts	**8,464**	**9,312**	**10,794**	**11,520**	**13,414**	**15,085**	**17,184**	**19,0**
Current Payments—								
Merchandise imports (adjusted)	6,203	6,579	7,537	8,627	10,102	10,772	12,162	14,0
Travel expenditures	605	585	712	796	900	895	1,008	1,2
Interest and dividends	783	860	1,010	1,086	1,140	1,211	1,259	1,3
Freight and shipping	595	648	679	761	823	861	931	9
Inheritances and emigrants' funds	175	185	201	211	198	213	209	1
Official contributions	36	65	69	93	166	182	133	1
Mutual aid to NATO countries	41	23	47	39	18	[1]	[1]	[1]
All other current payments	856	888	963	1,037	1,229	1,450	1,589	1,8
Totals, Current Payments	**9,294**	**9,833**	**11,218**	**12,650**	**14,576**	**15,584**	**17,291**	**19,8**
Balance on merchandise trade	+184	+503	+701	+118	+224	+566	+1,375	+8
Balance on other transactions	−1,014	−1,024	−1,125	−1,248	−1,386	−1,065	−1,482	−1,6
Current Account Balance	**−830**	**−521**	**−424**	**−1,130**	**−1,162**	**−499**	**−107**	**−7**
Capital Account—								
Direct Investment—								
Direct investment in Canada	+505	+280	+270	+535	+790	+691	+590	+6
Direct investment abroad	−105	−135	−95	−125	−5	−125	−225	−2
Canadian Securities—								
Trade in outstanding issues	−51	−131	−21	−219	−240	−45	+44	+
New issues	+729	+984	+1,100	+1,240	+1,465	+1,307	+1,917	+2,0
Retirements	−319	−404	−382	−390	−499	−357	−431	−3
Foreign security transactions	−65	+22	−52	−85	−401	−432	−467	+1
Loans and subscriptions by Government of Canada	+107	+7	—	−4	−11	−4	−73	−
Other long-term capital transactions	−113	+14	—	−88	+68	+320	+299	+
Change in Canadian dollar holdings of foreigners	−10	+17	+12	+45	+1	+24	+139	+
Other short-term capital movements	+306	+12	−44	+380	−365	−860	−1,337	−1,5
Net Capital Movement, Exclusive of Monetary Items	**+984**	**+666**	**+788**	**+1,289**	**+803**	**+519**	**+456**	**+8**
Net Official Monetary Movements—								
Official international reserves	+307	+56	+297	+159	−360	+17	+350	+
Official monetary liabilities	−153	+89	+67	—	+1	+3	−1	—
Net Official Monetary Assets	**+154**	**+145**	**+364**	**+159**	**−359**	**+20**	**+349**	+

[1] Excludes offsetting entries for mutual aid to NATO.

9.—Current and Capital Account Transactions Between Canada and the United States, 1962-69

(Millions of dollars)

Item	1962	1963	1964	1965	1966	1967	1968	1969
urrent Receipts—								
Merchandise exports (adjusted)	3,767	3,970	4,396	4,993	6,249	7,277	9,116	10,499
Gold production available for export	155	154	145	138	127	112	120	108
Travel expenditures	512	549	590	660	730	1,164	891	961
Interest and dividends	120	155	190	204	194	176	231	246
Freight and shipping	259	279	301	337	411	425	467	515
Inheritances and immigrants' funds	61	65	77	91	106	105	137	155
All other current receipts	345	342	359	409	484	548	627	788
Totals, Current Receipts	**5,219**	**5,514**	**6,058**	**6,832**	**8,301**	**9,807**	**11,589**	**13,272**
urrent Payments—								
Merchandise imports (adjusted)	4,205	4,458	5,204	6,034	7,242	7,846	8,867	10,132
Travel expenditures	419	388	481	548	628	627	710	893
Interest and dividends	656	727	850	906	985	1,058	1,074	1,119
Freight and shipping	353	378	399	465	530	522	561	602
Inheritances and emigrants' funds	139	152	157	160	145	156	145	127
All other current payments	539	559	602	656	801	940	1,033	1,132
Totals, Current Payments	**6,311**	**6,662**	**7,693**	**8,769**	**10,331**	**11,149**	**12,390**	**14,005**
urrent Account Balance	**−1,092**	**−1,148**	**−1,635**	**−1,937**	**−2,030**	**−1,342**	**−801**	**−733**
pital Account—								
Direct Investment—								
Direct investment in Canada	+328	+220	+188	+421	+638	+575	+354	+536
Direct investment abroad	+6	−36	−35	−24	+87	−72	−108	−181
Canadian Securities—								
Trade in outstanding issues	+73	−64	−14	−174	−167	+14	+37	−25
New issues	+690	+930	+1,040	+1,200	+1,409	+1,239	+1,391	+1,497
Retirements	−247	−315	−300	−330	−456	−301	−376	−353
Foreign security transactions	−55	+25	−41	−72	−371	−385	−432	+92
Other long-term capital transactions	−115	+83	+175	+84	+98	+188	+268	+66
Change in Canadian dollar holdings of foreigners	+27	+7	+16	+10	+15	−1	+23	+43
Other short-term capital movements	+365	−24	+607	−678	−195	−706	−1,293	−583
t Capital Movement	**+1,072**	**+826**	**+1,636**	**+437**	**+1,058**	**+ 551**	**−136**	**+1,092**
lance Settled by Exchange Transfers	**+554**	**+378**	**+27**	**+1,543**	**+488**	**+771**	**+1,418**	..
t Official Monetary Movements—								
Official international reserves	+537	+56	+28	+43	−484	−20	+483	..
Official monetary liabilities	−3	—	—	—	—	—	−2	..
t Official Monetary Assets	**+534**	**+56**	**+28**	**+43**	**−484**	**−20**	**+481**	..

20.—Current Account Transactions Between Canada and the United Kingdom, 1962-6
(Millions of dollars)

Item	1962	1963	1964	1965	1966	1967	1968	19
Current Receipts—								
Merchandise exports (adjusted)	924	1,017	1,219	1,184	1,133	1,199	1,240	1,
Travel expenditures	22	28	33	34	39	40	23	
Interest and dividends	28	31	80	44	32	36	16	
Freight and shipping	98	105	130	132	121	127	124	
Inheritances and immigrants' funds	28	43	46	55	81	81	77	
All other current receipts	66	77	102	109	113	125	140	
Totals, Current Receipts	**1,166**	**1,301**	**1,610**	**1,558**	**1,519**	**1,608**	**1,620**	**1,**
Current Payments—								
Merchandise imports (adjusted)	578	521	584	624	664	651	682	
Travel expenditures	71	70	80	89	94	88	103	
Interest and dividends	85	82	104	114	93	90	94	
Freight and shipping	88	94	89	86	89	104	94	
Inheritances and emigrants' funds	18	15	24	30	30	31	38	
All other current payments	101	102	124	110	124	132	143	
Totals, Current Payments	**941**	**884**	**1,005**	**1,053**	**1,094**	**1,096**	**1,154**	**1,**
Current Account Balance	**+225**	**+417**	**+605**	**+505**	**+425**	**+512**	**+466**	**+**

Section 5.—Canada's International Investment Position*

Canada's balance of international indebtedness reached a book value of ov $27,000,000,000 by the end of 1969, an almost sevenfold increase over the past two decad Long-term foreign investment rose by about $3,500,000,000, reflecting both an inflow long-term capital and an increase in earnings accrued to and reinvested by non-residen Other non-residents' claims on Canadians brought the total of Canada's external liabiliti to about $46,000,000,000. Total outflow of domestic long-term capital together with increase in earnings accrued to Canadians abroad caused the total book value of Canadi long-term investment abroad to rise to over $10,000,000,000 at the end of 1969. D mainly to the large rise in private holdings of foreign exchange, total Canadian assets abro registered an increase of about $2,000,000,000, well exceeding $18,000,000,000 at the e of 1969.

The balance of international indebtedness is a phrase generally accepted in balanc of-payments terminology to include equity investments as well as contractual borrowing Its size and character have a considerable influence on Canada's balance of payment This is true not only through the servicing of capital involving interest, dividends and mi cellaneous income payments but also through the influence of foreign investment on t Canadian economy and on the shape and direction of its external demands.

Canada has been among the world's largest importers of private long-term capita The very substantial capital formation which was a feature particularly since the 1950s w associated with an unprecedented growth in the country's external liabilities. These i vestments contributed to a rapid rate of growth in the Canadian economy, particular in the exploitation of natural resources, and added significantly to Canadian productio employment and income. At the same time they added substantially to the continuin burden of Canada's external debt and to the proportion of Canadian industry controll by non-residents.

* This review covers Canada's international investment position in 1967, although a few estimated totals f 1969 available at the time of writing are included in the first paragraph. An extended historical review appears DBS report *Canada's International Investment Position, 1926 to 1954* (Catalogue No. 67-503) and more recent statisti in the annual report *Canadian Balance of International Payments and International Investment Position* (Catalog No. 67-201), and in the *Quarterly Estimates of the Canadian Balance of International Payments* (Catalogue No. 67-00 Additional detailed material will be found in the annual report under the Corporations and Labour Unions Retur Act.

Canada's gross external liabilities amounted to $40,200,000,000 at the end of 1967; non-sident-owned long-term investments in Canada reached a book value of $34,700,000,000. he part of these investments in enterprises controlled outside of Canada totalled 20,700,000,000. Investments in other Canadian equities, although smaller, were also ıbstantial and there were periods in recent years of sharp increase in foreign holdings of anadian bonds and debentures.

Investments of non-resident capital have been closely related to the high rate of growth Canada and to the heavy demands placed on capital markets by this factor and by the nancial needs of governments and municipalities. Large development projects have een initiated and financed by investors from other countries and the growth effects from is investment have, in turn, led to Canadian borrowing in capital markets outside Canada. hile capital inflows have been the principal source of the increased indebtedness abroad, nother substantial contributor has been the earnings from non-resident-controlled branches nd subsidiaries which were retained in Canada. New resource industries depending to large extent on non-resident financing include all branches of the petroleum industry, on ore, potash and other mining, aluminum, nickel, pulp and paper, and chemical in-ustries. In addition, secondary industry has also benefited from non-resident investment.

Canada's gross external assets totalled $15,000,000,000 at the end of 1967 and govern-ent-owned assets made up a substantial part of that total. Canada's net balance of ternational indebtedness, including equity investments, at the same date was estimated $25,200,000,000.

Foreign Investments in Canada.—Dependence upon external sources of capital for nancing in periods of heavy investment activity has been characteristic of Canadian evelopment. During the exceptional growth that occurred before World War I, non-sident investment was very high and the main source of that investment was London. owever, during the first part of the inter-war period, the United States became the prin-pal source of external capital and by 1926 the portion of Canada's international debt wned in that country exceeded that owned in the United Kingdom. With some interrup-on during the 1930s, United States investment in Canada continued to increase, partic-arly after 1947 when the period of intense activity in the petroleum industry got under way. t $28,030,000,000, United States long-term investments in 1967 represented about 81 p.c. all non-resident long-term investment in Canada. The main rise occurred in direct vestments in companies controlled in the United States.

United Kingdom long-term investments in Canada totalled $3,576,000,000 at the end 1967 and accounted for only about 10 p.c. of the total non-resident investments in Canada mpared with 36 p.c. at the end of 1939 before most of the wartime repatriations. After aching a low point in 1948, the value of United Kingdom investments in Canada increased ch year to 1962, declined slightly in 1963, partly as a result of Canadian repatriation of vestments in railways and further provincial takeover of other utilities, then increased gain in subsequent years.

Long-term investments of countries other than the United States and the United ingdom reached a record total of $3,096,000,000 at the end of 1967. About two and one lf times the 1957 figure, this represented a much higher rate of increase than had occurred either United States or United Kingdom investments, and large increases had taken place direct as well as in miscellaneous investments. At about 9 p.c. of the total, compared ith 7 p.c. in 1957, this group of countries, mostly in Western Europe, accounted for a ightly larger proportion of total foreign investments than in 1966. Over 85 p.c. of the rect investment, which totalled $1,547,000,000 in 1967, came from Europe; about one uarter was of Netherlands origin, with French, Belgian, Swiss and German investments aking up the next largest groups.

The degree of dependence on non-resident capital for financing Canadian investment has en relatively much less in the postwar period than in the earlier periods of exceptional xpansion, even though the rise in non-resident investments has been so great. Thus, from 950 to 1953 the net use of foreign resources amounted to about one seventh and direct

foreign financing to almost 30 p.c. of net capital formation in Canada. But from 1958 1961, when these ratios had increased considerably to 34 p.c. and 47 p.c., respectively, th were still less than the corresponding ratios in the 1929-to-1930 period when inter-war i vestment activity was at its highest point. In that shorter period, more than one half net capital formation was financed from outside of Canada, and in the period of heav investment before World War I an even larger ratio of investment was financed by extern capital. After 1961 these ratios declined somewhat; from 1962 to 1965 the net use of foreig resources comprised 19 p.c. of net capital formation in Canada and direct foreign financin 43 p.c. In considering these changes it should be noted that for a decade and a half, b tween 1934 and 1949, Canada was a net exporter of capital and that Canadian assets abro have been rising over a long period.

It should also be noted that the above ratios relate to the place of non-resident inves ments in all spheres of development including those where Canadian sources of financi predominate such as in merchandising, agriculture, housing, public utilities and other forn of social capital. Thus, non-resident financing of manufacturing, petroleum and mini has been much higher than the over-all ratios indicate and has provided the major portio of the capital investment in this field in the period since 1948. The most recent compr hensive calculation of the ratios of non-resident ownership in Canadian manufacturin mining and petroleum is for the year 1966. In that year the Canadian manufacturing in dustry was 53 p.c. owned by non-residents but capital subject to foreign control was 58 p. These proportions compared with 50 p.c. and 56 p.c., respectively, as recently as the end 1957. In the field of petroleum and natural gas, non-resident ownership and contr amounted to 63 p.c. and 74 p.c., respectively, at the end of 1966, whereas at the end of 195 non-resident ownership and control had amounted to 63 p.c. and 76 p.c., respectively; i mining and smelting, non-resident ownership and control amounted to 59 p.c. and 62 p.c respectively, compared with 56 p.c. and 61 p.c. in 1957.

However, resident-owned Canadian capital continued to play a leading role in th financing of such areas of business as merchandising, railways and other public utilitie Hence, non-resident ownership in a broad range of business activity, including manufactu ing, petroleum, mining, merchandising and railways and utilities, rose only slightly fro 32 p.c. in 1948 to 36 p.c. in 1966. But, in the same years, companies subject to non-residen control increased from 25 p.c. to 34 p.c. their share of the total capital even in this broa area of business, a trend also evident in many subdivisions of the manufacturing an extractive industries.

Another basis of judging the place of foreign-controlled business in Canadian industr is provided by a special study of production and employment in the larger Canadian manu facturing establishments controlled by non-residents. Enterprises having an investmen in Canada of $1,000,000 or more accounted for about 40 p.c. of Canadian manufacturin production in 1961 and 29 p.c. of employment in that field. About 33 p.c. of Canadia manufacturing production and 22 p.c. of employment originated with United States controlled plants. These ratios in United States-controlled plants were somewhat highe than in 1953—the previous year for which a study of this kind was made. In some in dustries the proportions of production and employment in plants controlled by non-resident were much higher than this. Automobiles, for example, are produced mainly in Unite States-controlled plants, but this is exceptional. Other industries in which well over on half of the production is in non-resident-controlled firms include the smelting and refinin of non-ferrous metals, petroleum refining, motor vehicle parts, aircraft and parts, an industrial chemicals. In several major industries like fruit and vegetable canning an preserving, and miscellaneous machinery and equipment manufacturing, the distributio of production between Canadian and foreign-controlled companies is more even. In suc industries as pulp, paper and miscellaneous food manufacturing, the non-resident share i large although less than one half of the total.

There are, however, many industries where the largest part of production is in Canadian controlled plants. Prominent among these are such important branches of industry as iro

d steel mills, sawmills, feed manufacturing, clothing, and such divisions of the food and verage group as bakeries, slaughtering and meat packing, pasteurizing and butter and eese plants.

Canadian Assets Abroad.—Although there has been a great growth in non-resident vestment in Canada and in the balance of Canadian indebtedness to other countries, it ll be noted that Canadian assets abroad (Tables **21**, **24** and **25**) have continued to rise value. These now equal a larger proportion of liabilities abroad than was the case fore World War II, but more than one quarter of the increase since then has been in vernment-owned assets such as the official reserves and the loans by the Canadian overnment to other governments which were extended during the war and early postwar ars. At the end of 1967, the government credits outstanding had a value of $1,406,000,000 hile official holdings of exchange and Canada's net International Monetary Fund (IMF) sition amounted to some $2,934,000,000 (Cdn.). Other official Canadian assets included nada's subscriptions to the capital of the International Bank for Reconstruction and evelopment, the International Development Association, the International Finance rporation and the Asian Development Bank. These assets were partly offset by liabilities these institutions.

The portion of the assets in private investments, particularly in the form of direct vestments abroad by Canadian companies, is still small in relation to the corresponding n-resident stake in equities in Canada. At the end of 1967, Canadian direct investment road totalled $4,030,000,000 and portfolio investment abroad by Canadians amounted to ,566,000,000. About two thirds of the privately owned investments were located in the nited States. Direct investments in that country by Canadian businesses have grown pidly and are found in many fields, among which the beverage and farm implement dustries are particularly noteworthy.

Private investments in overseas countries are widely distributed. Somewhat more an one half of the total in 1967 were located in Commonwealth countries, with the United ngdom accounting for nearly 50 p.c. of the total investment in the Commonwealth. ost of the direct investments in the United Kingdom were in manufacturing, while in her Commonwealth countries investments in mining were of almost equal importance th those in manufacturing. In other overseas countries the largest part was in the untries of South and Central America where Canadian holdings in public utilities are bstantial.

—Estimate of the Canadian Balance of International Indebtedness, as at Dec. 31, 1960-67

NOTE.—Totals are rounded and may not represent the sum of their components.

(Billions ['000 millions] of dollars)

Item	1960	1961	1962	1963[r]	1964[r]	1965[r]	1966[r]	1967
nadian Liabilities—								
Direct investment	12.9	13.7	14.7	15.5	16.0	17.4	19.0	20.7
overnment and municipal bonds	3.3	3.4	3.7	4.2	4.7	5.0	5.2	5.8
ther portfolio investments	4.6	4.7	4.7	4.7	4.8	5.1	5.7	5.8
iscellaneous investments	1.4	1.7	1.8	1.8	2.1	2.2	2.3	2.4
Foreign Long-Term Investments in Canada	22.2	23.6	24.9	26.2	27.5	29.6	32.1	34.7
quity of non-residents in Canadian assets abroad	1.1	1.2	1.3	1.4	1.5	1.6	1.6	1.7
anadian dollar holdings of non-residents	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7
Gross Liabilities[1]	**24.0**	**25.4**	**26.8**	**28.2**	**29.6**	**31.8**	**34.3**	**37.1**
nited States[1]	18.0	19.3	20.6	22.1	23.1	25.0	27.4	29.7
nited Kingdom[1]	3.5	3.5	3.6	3.5	3.6	3.7	3.7	3.8
ther countries[1,2]	2.4	2.5	2.6	2.6	2.8	3.1	3.2	3.6
hort-term payables[3]	1.6	1.9	2.0	2.3	3.2[4]	3.4[4]	3.6[4]	3.1[4]
Gross Liabilities	**25.6**	**27.3**	**28.8**	**30.5**	**32.8**	**35.2**	**37.9**	**40.2**

For footnotes, see end of table, p. 1206.

21.—Estimate of the Canadian Balance of International Indebtedness, as at Dec. 31, 1960-6 concluded

Item	1960	1961	1962	1963[r]	1964[r]	1965[r]	1966[r]	196
Canadian Assets—								
Direct investment	2.5	2.6	2.8	3.1	3.3	3.5	3.7	4.
Portfolio investments	1.3	1.4	1.6	1.7	1.8	1.9	2.2	2.
Government of Canada credits	1.5	1.4	1.3	1.3	1.5[5]	1.5[5]	1.5[5]	1.
Government of Canada subscriptions to international investment agencies	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.
Miscellaneous investments[6]	—	0.1	0.2	0.3	0.4	0.6	0.7	0.
Canadian Long-Term Investments Abroad	5.3	5.7	6.1	6.4	7.1	7.6	8.3	8.
Government of Canada holdings of gold and foreign exchange	1.8	2.2	2.7	2.8	2.9	2.9	2.4	2.
Net IMF position	0.2	0.2	−0.1	−0.1	0.2	0.4	0.5	0.
Other Canadian short-term holdings of exchange	1.2	1.1	1.0	1.3	1.8	1.7	2.4	2.
Gross Assets[1]	**8.5**	**9.1**	**9.7**	**10.5**	**12.0**	**12.5**	**13.6**	**14.**
Government of Canada holdings of gold, foreign exchange and net IMF position	2.0	2.4	2.6	2.8	3.1	3.3	2.9	2.
United States[1,7]	3.7	3.8	4.0	4.5	4.7	5.6	6.6	7.
United Kingdom[1,7]	1.5	1.5	1.6	1.9	2.6	2.2	2.2	2.
Other countries[1,2]	1.3	1.4	1.5	1.2	1.6	1.5	1.9	2.
Short-term receivables[3]	0.5	0.5	0.5	0.5	0.4	0.3	0.3	0.
Gross Assets	**8.9**	**9.6**	**10.1**	**10.9**	**12.4**	**12.9**	**13.9**	**15.**
Canadian Net International Indebtedness—Net Liabilities	**16.6**	**17.7**	**18.7**	**19.6**	**20.4**	**22.4**	**24.1**	**25.**
Government of Canada holdings of gold, foreign exchange and net IMF position	−2.0	−2.4	−2.6	−2.8	−3.1	−3.3	−2.9	−2.
United States[1,7]	14.3	15.5	16.7	17.5	18.4	19.4	20.8	22.
United Kingdom[1,7]	2.0	2.0	2.0	1.6	1.0	1.6	1.6	1.
Other countries[1,2]	1.1	1.1	1.1	1.4	1.2	1.6	1.3	1.
Short-term indebtedness[3]	1.1	1.4	1.6	1.8	2.8	3.0	3.3	2.

[1] Excludes short-term receivables and payables. [2] Includes international investment agencies. [3] Country distribution not available. [4] Includes finance company obligations, some of which were in earl years shown as long-term investments. [5] Includes medium-term non-marketable United States Governm securities acquired under the Columbia River Treaty arrangements. [6] Includes export credits by governm and private sectors less reserve against government inactive assets. [7] Excludes Government of Cana holdings of gold and foreign exchange.

22.—Foreign Capital Invested in Canada, by Type of Investment, as at Dec. 31, 1960-

(Millions of dollars)

Type of Investment	1960	1961	1962	1963[r]	1964[r]	1965[r]	1966[r]	1967
Government Securities—								
Federal	611	657	788	899	897	880	649	5
Provincial	1,632	1,743	1,862	2,217	2,564	2,828	3,171	3,8
Municipal	1,026	1,038	1,087	1,091	1,221	1,253	1,333	1,4
Totals, Government Securities	3,269	3,438	3,737	4,207	4,682	4,961	5,153	5,8
Public Utilities—								
Railways	1,406	1,366	1,270	1,174	1,105	1,040	1,055	1,0
Other (excluding pipelines and public enterprises)	743	656	691	591	605	667	758	8
Totals, Public Utilities	2,149	2,022	1,961	1,765	1,710	1,707	1,813	1,8
Manufacturing (excluding petroleum refining)	6,115	6,446	6,731	7,097	7,580	8,380	9,279	10,0
Petroleum and natural gas	3,727	4,029	4,384	4,749	4,854	5,268	5,719	6,0
Other mining and smelting	1,977	2,094	2,297	2,322	2,442	2,557	2,872	3,1
Merchandising	872	917	972	1,017	1,092	1,198	1,297	1,4
Financial	2,380	2,616	2,688	2,914	2,650	2,876	3,134	3,4
Other enterprises	297	348	366	363	407	485	559	6

2.—Foreign Capital Invested in Canada, by Type of Investment, as at Dec. 31, 1960-67—concluded

Type of Investment	1960	1961	1962	1963r	1964r	1965r	1966r	1967
scellaneous investments	1,428	1,696	1,753	1,771	2,057[1]	2,171[1]	2,264[1]	2,431[1]
Totals, Investment	**22,214**	**23,606**	**24,889**	**26,205**	**27,474**	**29,603**	**32,090**	**34,702**
ited States[2]	16,718	18,001	19,155	20,537	21,558	23,389	25,723	28,030
ited Kingdom[2]	3,359	3,381	3,399	3,348	3,460	3,512	3,518	3,576
ıer countries	2,137	2,224	2,335	2,320	2,456	2,702	2,849	3,096

[1] Includes Columbia River Treaty receipts. [2] Includes some investments held for residents of other ntries.

23.—Foreign Capital Invested in Canada, by Type of Investment, classified by Estimated Distribution of Ownership, as at Dec. 31, 1966 and 1967

NOTE.—Common and preferred stocks are at book values as shown in the balance sheets of the issuing com- ies; bonds and debentures are valued at par; and liabilities in foreign currencies are converted into Canadian lars at par of exchange.

Year and Type of Investment	Estimated Distribution of Ownership			Total Investments of Non-residents
	United States[1]	United Kingdom[1]	Other Countries	
	$'000,000	$'000,000	$'000,000	$'000,000
1966r				
vernment Securities—				
ederal	486	7	156	649
rovincial	3,056	73	42	3,171
unicipal	1,290	28	15	1,333
Totals, Government Securities	4,832	108	213	5,153
lic Utilities—				
ailways	427	467	161	1,055
ther (excluding pipelines and public enterprises)	703	29	26	758
Totals, Public Utilities	1,130	496	187	1,813
ufacturing (excluding petroleum refining)	7,788	1,083	408	9,279
roleum and natural gas	4,656	542	521	5,719
er mining and smelting	2,464	209	199	2,872
chandising	913	289	95	1,297
ancial	2,040	524	570	3,134
er enterprises	463	67	29	559
cellaneous investments	1,437[2]	200	627	2,264
Totals Investments, 1966	**25,723**	**3,518**	**2,849**	**32,090**
1967				
vernment Securities—				
ederal	395	12	149	556
rovincial	3,672	90	57	3,819
unicipal	1,393	29	16	1,438
Totals, Government Securities	5,460	131	222	5,813
lic Utilities—				
ailways	440	422	156	1,018
ther (excluding pipelines and public enterprises)	750	36	26	812
Totals, Public Utilities	1,190	458	182	1,830
ufacturing (excluding petroleum refining)	8,481	1,095	441	10,017
oleum and natural gas	4,905	554	550	6,009
er mining and smelting	2,656	215	279	3,150
chandising	1,007	308	117	1,432
ancial	2,241	555	619	3,415
er enterprises	500	69	36	605
cellaneous investments	1,590[2]	191	650	2,431
Totals Investments, 1967	**28,030**	**3,576**	**3,096**	**34,702**

[1] Includes some investments held for residents of other countries. [2] Includes Columbia River Treaty pts.

24.—Canadian Long-Term Investments Abroad, 1960-67

NOTE.—Excludes investments of insurance companies and banks (held mainly against liabilities to non-reside Canada's subscriptions to international investment agencies, and miscellaneous investments (Table 21). Hold of stocks are at book values as shown in the books of issuing companies; holdings of bonds are shown at par val Foreign currencies are converted into Canadian dollars at current market rates.

(Millions of dollars)

Assets	1960	1961[r]	1962[r]	1963[r]	1964[r]	1965[r]	1966[r]	19
Direct investments in enterprises outside Canada	2,467	2,596	2,784	3,082	3,272	3,469	3,711	4,0
Portfolio holdings of foreign securities	1,315	1,443	1,643	1,692	1,779	1,897	2,238	2,5
Government credits	1,462	1,424	1,301	1,285	1,517[1]	1,495[1]	1,451[1]	1,4
Totals	**5,244**	**5,463**	**5,728**	**6,059**	**6,568**	**6,861**	**7,400**	**8,0**

[1] Includes medium-term non-marketable United States Government securities acquired under the Colum River Treaty arrangements.

25.—Canadian Long-Term Investments Abroad, by Location, as at Dec. 31, 1966 and 1

NOTE.—See headnote to Table 24.

Year and Location of Investment	Direct Investments	Portfolio Investments		Government Credits	Total Investments
		Stocks	Bonds		
	$'000,000	$'000,000	$'000,000	$'000,000	$'000,00
1966[r]					
United States	2,100	1,559	143	156	3,
United Kingdom	541	51	13	1,059	1,
Other Commonwealth countries	505	15	29	27	
Other foreign countries	565	241	187	209	1,
Totals	**3,711**	**1,866**	**372**	**1,451**	**7,**
1967					
United States	2,190	1,779	188	123	4,
United Kingdom	515	52	15	1,040	1,
Other Commonwealth countries	613	13	27	36	
Other foreign countries	712	250	242	207	1,
Totals	**4,030**	**2,094**	**472**	**1,406**	**8,**

Section 6.—Government Economic Planning Agencies

Subsection 1.—The Economic Council of Canada

The Economic Council of Canada was established by Act of Parliament (SC 1963, 11) assented to on Aug. 2, 1963. The Council is an economic advisory body with broad ms of reference. The central feature of its duties is "to advise and recommend . . . how nada can achieve the highest possible levels of employment and efficient production in der that the country may enjoy a high and consistent rate of economic growth and that Canadians may share in rising living standards; to recommend what government policies will best help to realize the potentialities of growth of the economy; to consider means strengthening and improving Canada's international financial and trade position; . . . to dy how national economic policies can best foster the balanced economic development of areas of Canada; . . . ".

In addition, Parliament made provision for the Council to undertake special studies at request of the Government in areas that fall within the purview of its general terms of erence. The Council has had two such References. In its first Reference, the Governnt asked the Economic Council to launch an examination into prices, costs, incomes d productivity and their relationship to sustained economic growth. The Council orted to the Government and to the Canadian public on this Reference in its *Third nual Review*. A second Reference from the Government asked the Council: "In the nt of the Government's long-term economic objectives, to study and advise regarding: the interests of the consumer particularly as they relate to the functions of the Departnt of the Registrar General (now the Department of Consumer and Corporate Affairs); combines, mergers, monopolies and restraint of trade; (c) patents, trade marks, copyhts and registered industrial designs". An interim report under Sect. (a) of this Referce was published in July 1967; an interim report under Sect. (b) was published in the mmer of 1969; and a third and final report under Sect. (c) will be released in the winter 1971.

The Council has no operational responsibilities. It does not implement or administer policies or programs nor does it have the authority to make research grants, although it y make contractual arrangements with persons other than its staff for the purpose of vising and assisting the Council in the performance of its duties.

The Council consists of up to 28 members appointed by the Governor in Council, luding a chairman and two directors who serve full time in their professional capacity, and to 25 members who are selected from industry, labour, finance and commerce, agriculture l other primary industries, and the general public. The chairman and the directors e of whom is elected as vice-chairman by the Council) are appointed for seven-year terms. e other members are appointed for three-year terms "after consultation with appropriate resentative organizations" and are intended to reflect a very wide diversity of interests m the different private sectors of the economy and different regions of the country, but y sit on the Council as individuals and not as delegates of particular organizations or ups. The Council is therefore a mixed body rather than an expert professional body, hough it is served in its deliberations by an expert staff. There are no government mbers appointed to the Council. Under the Act, the chairman is the chief executive cer of the Council and has supervision over, and direction of, the work and staff of the ncil.

The publications policy of the Economic Council is based on two provisions of the , one that requires the Council to publish annually a review of the medium- and longn prospects and problems of the Canadian economy, and a second that empowers the ncil to publish, as it sees fit, such studies and reports prepared for its use. These visions enable the Council to carry out a most vital function, namely, the dissemination nformation to the public as a means of stimulating informed appraisal and discussion of nomic problems and policies.

The Council's publications* fall into three broad categories: (1) The Annual Revie which summarize the results of the Council's studies and present its conclusions and reco mendations (seven of which have been issued to date); (2) Staff and Special Studies whi provide more detailed statistical, technical, and analytical results of the various resear projects; and (3) Conference papers and other reports.

In its *First Annual Review* the Council stated its underlying philosophy of approa in this way:—

> We are concerned not with the question of inventing new forms of intervention, b rather with ordering and developing our policies and social programmes in a rational a coherent manner designed to accomplish consistently what the society has declared to its economic and social goals. For this purpose it is essential to bring to bear the needs the future on the decisions of today. This applies not only to decisions by governmer but also to decisions in the private sector of the economy.

Canada's Economic Potential

The Canadian economy since the Second World War has encountered at one time another inflation, higher unemployment, slow rates of economic growth, and even crises the balance of international payments. This experience serves well to demonstrate th the real problem is not how to achieve one particular economic or social objective, but rath how to attain all of them—consistently—at the same time. This is another way of sayi that the various goals are not always compatible with one another; there is always overriding requirement to reconcile conflicts.

Once there is general public agreement on the broad set of goals to be pursued, t next task is to define them quantitatively in accordance with Canadian circumstances a possibilities. This the Council has done, publishing "targets". These targets are n forecasts or prophecies but are intended to be measures of desirable performance of t economy—that is, concrete aims of public policy. These objectives or targets were fir set out by the Council in its *First Annual Review*, were revised and updated in the *Four Annual Review*, and again in the *Sixth Annual Review*.

Full Employment.—The Council believes that, over the medium-term futur economic policies should be actively directed toward achieving 97 p.c. employment—th is, no more than 3 p.c. of the labour force unemployed. But this is not regarded by t Council as an ultimate or satisfactory goal for all time; as it has stated, "We would ho that with sustained improvement in our economic performance it may eventually becon realistic to aim for an even better performance in the level of employment". The Counc also emphasized that the target rate is an average annual rate allowing for seasonal vari tion, and is a national average within which there will be some regional variation. Co

* The Reviews, like all Council publications, are available from Information Canada, Ottawa. They are: *Fi Annual Review: Economic Goals for Canada to 1970* ($2.50, Catalogue No. EC21-1/1964); *Second Annual Review: Towar Sustained and Balanced Economic Growth* ($2.75, EC21-1/1965); *Third Annual Review: Prices, Productivity and Emplo ment* ($2.75, EC21-1/1966); *Fourth Annual Review: The Canadian Economy from the 1960's to the 1970's* ($2.75, EC2 1/1967); *Fifth Annual Review: The Challenge of Growth and Change* ($2.75, EC21-1/1968); *Sixth Annual Review: Perspe tive 1975* ($2.75, EC21-1/1969); and *Seventh Annual Review: Patterns of Growth* ($2.50, EC21-1/1970). Each of the Reviews includes a chapter on economic performance in relation to medium-term goals. In 1970, the Council e panded this appraisal and published it under the title *Performance and Potential: Mid-1950's to Mid-1970's* (EC21- 1970-1).

Among other Council publications of more general interest are: *Business Cycles in Canada*, by Derek A. Whi ($2.25, EC22-1/17); *Perspective on Canada's International Payments*, by David W. Slater ($1.60, EC22-2/3); *Incom Policies—Some Foreign Experiences and Their Relevances for Canada*, by David C. Smith ($1.75, EC22-2/4); *Intern Migration in Canada, 1921-1961*, by Isabel B. Anderson ($1.60, EC22-1/13); *Enrolment in Educational Institutions, Provinces, 1951-52 to 1980-81*, by Z. E. Zsigmond and C. J. Wenaas ($3.00, EC22-1/25); *Population, Family, Househo and Labour Force Growth to 1980*, by W. M. Illing, *et al.* ($1.00, EC22-1/19); *Canadian Policies for Rural Adjustment- A Study of the Economic Impact of ARDA, PFRA and MMRA*, by Helen Buckley and Eva Tihanyi ($2.25, EC22-2/7 *National Conference on Labour-Management Relations, Ottawa, March 21-22, 1967* ($2.00, EC22-367); *Interregional Di parities in Income*, by S. E. Chernick ($1.75, EC22-1/14); *Scale and Specialization in Canadian Manufacturing*, b D. J. Daly, B. A. Keys, and E. J. Spence ($1.75, EC22-1/21); *Canadian Growth Revisited, 1950-1967*, by Doroth Walters ($1.50, EC22-1/28); *Science, Technology and Innovation*, by Andrew H. Wilson ($1.50, EC22-2/8); *Interi Report—Consumer Affairs and the Department of the Registrar General* ($.25, EC22-1067); *Medium-Term Capital In vestment Survey 1969*, by B. A. Keys, F. G. Thompson and M. Heath (available from the Economic Council c Canada). A complete list of Council publications is available from the Secretary, Economic Council of Canad P.O. Box 527, Ottawa. Also available from the Secretary are the Annual Reports of the Chairman, which includ the Act establishing the Council and the membership of the Council.

lering the rapid rate of increase in the numbers of people entering the labour force in nada—close to 240,000 persons a year, on average, between 1965 and 1975—this goal uld mean that the economy would have to grow fast enough to provide 2,400,000 new bs over that ten-year period.

A High Rate of Economic Growth.—In calculating a potential rate of increase in tal production (and thus incomes) the Council views economic growth as arising from:) increases in the *quantity* and *quality* of resources (for example, more manpower and pital, and higher levels of education and more efficient equipment); and (2) increases in oductivity or in the efficiency with which men and capital are used and combined.

For the period to 1975, the Council has projected an average annual growth of 5.5 p.c. the *volume* of production of all goods and services (*volume* in the sense that price increases e deducted from the value of production). Approximately two fifths of this gain in tput would come from the employment increase, with a slight increase in the average ucational level of the labour force. Another one fifth, roughly, would come from in- ased investment by government and industry. The remaining portion of the growth e, around one third, would stem from productivity gains. The potential growth rate of p.c. a year is high by both historical and international standards. It implies an increase the total volume of output from $66,000,000,000 in 1967 to about $100,000,000,000 by 75. This would mean an increase in the average standard of living in Canada—that is, al income divided by total population—of approximately one third.

Reasonable Price Stability.—In its projections to 1975, the Council assumed that GNP price index would rise at an average annual rate of 2 p.c. The Council said it uld regard this as consistent with the attainment of a satisfactory degree of price and st stability over the medium-term future, at least under conditions of reasonable price bility abroad, particularly in the United States. Such an average rate of price increase uld imply that some demand components—government expenditures, housing, and busi- ss investment in plant and equipment—would rise at a somewhat faster rate than the al and that the rate of advance in consumer prices and in export and import prices would somewhat less. The Council added:—

> We recognize that the achievement of this degree of price and cost stability will be extraordinarily difficult under conditions of high demand and high employment, as has been amply demonstrated by developments of the past three years. However, we continue to regard it as one of the basic goals towards which Canadians should continue to strive in the conduct of their economic affairs, with particular emphasis on longer-range policies designed to deal with basic structural and regional problems—that is, policies which would facilitate the consistent achievement of both our employment and price goals.

A Viable Balance of Payments.—After careful reappraisal in 1967, the Council ncluded that the balance-of-payments goal set out in 1964 was appropriately formulated terms of a current account deficit (and accompanying net capital inflow) at potential ut in 1970 in the order of $1,500,000,000 to $2,000,000,000 and that this goal is still evant.

From the mid-1950s to the end of the 1960s, the current account deficit (and the net ital inflow) declined from close to 5 p.c. of GNP to about 1 p.c. Changes in the mer- ndise trade balance mainly accounted for the large relative decline in the current account ance; the trade balance shifted from a deficit equivalent to 2 p.c. of GNP in the mid-1950s a surplus equivalent of about 2 p.c. of GNP by the end of the 1960s. Apart from 1967, services deficit remained in a range of 2 to 3 p.c. of GNP. Over this period, net inflows capital in long-term forms decreased significantly in relation to output (from about 4 p.c. GNP in the mid-1950s to about 2 p.c. in the latter part of the 1960s).

From early 1969 to early 1970, virtually all of the increase in real GNP went into anded Canadian exports. The floating of the dollar in June 1970 is attributed to Cana- s decision that it would not continue to finance a very rapidly increasing volume of hange reserves at the previous fixed rate of exchange, especially in the light of the possi-

bility of a massive speculative inflow of capital. The huge merchandise trade surplu (about $1,300,000,000 in the first half of 1970) and a strong capital inflow swiftly draine away the Canadian dollar balances of the Government of Canada that were required f purchasing foreign exchange accumulating in the official reserves. Policies of restraint i Canada tended to slow the growth of imports and thus contributed to the increased trad surplus.

Whether Canada could maintain medium- and longer-term balance-of-payments vi bility with the Canadian dollar at a level that was close to par with the U.S. dollar is a open question. The exchange rate is, in fact, a very important *price* in Canada's over-a price system, and changes in it tend to have far-reaching consequences for many parts o the economy.

Equitable Distribution of Rising Incomes.—This is an extremely complex goa defying simple formulation. The Council believes that much more information is neede about the distribution of income among individuals, families and various occupation groups. For example, why do some groups receive little benefit from the general rise i incomes and living standards? What elements lie behind the vicious circle of povert that still traps far too many people? Although some of these problems may range fa beyond the field of economics, the Council has said that these difficult matters will have t be understood and faced if appropriate policies are to be devised to achieve the goal o equitable distribution of rising incomes. To date, the Council's work in this area has bee concentrated on two aspects of the fifth goal, namely, regional disparities and poverty

The problem of assuring an appropriate participation on the part of each region in th over-all process of national economic development has long been an elusive goal and continuing concern of the people of Canada. The Council's analysis showed that over th past four decades there has been relatively little progress toward the achievement of better balance in this respect. Despite various policies and programs, very wide dis parities have continued to exist in average per capita income. Also, there have continue to be wide differences in the extent to which the human and material resources of each regio have found opportunities for productive use. Although national prosperity has alway tended to have a favourable influence everywhere, rapid national growth has not by itsel served to bring about any significant or lasting reduction in these large and stubborn dif ferences.

The emergence of some slack in the late 1960s and the development of more slack i 1970 is again being accompanied, as in earlier similar conditions, by the slower growth o employment and high unemployment rates in the lower-income regions. Employmen growth in the Atlantic Provinces has averaged only 4,000 a year over the past three year (total employment in the Atlantic Provinces was 605,000 in 1969). Similarly, in this three year period, employment growth in Quebec averaged less than 20,000 a year (total employ ment in Quebec was over 2,130,000 in 1969).

Rates of unemployment have become very high in the Atlantic Provinces, Quebec an British Columbia, in all of which the unemployment rates tend to be relatively high whe slack develops in the Canadian economy generally. An unusual feature in the recent patter of increases in unemployment rates is that the Prairie Provinces, which typically have a rat below that of Ontario, had a higher rate in mid-1970. This was a reflection of specia difficulties with wheat and potash marketing and problems in the construction industry. Another unusual feature is the exceptionally high rate of unemployment in British Columbi in mid-1970, reflecting, in part, the effects on the regional economy of increased industria disputes and perhaps also a stepped-up flow of migration to that province.

Like the objective of improved regional balance, the elimination of poverty is one aspect of the still broader goal of an equitable distribution of rising incomes. Poverty is a relative matter, and generally accepted conceptions of it vary through time and space. Poverty today is not the same as poverty in the Great Depression of the 1930s and poverty today in Canada is not the same as poverty in the underdeveloped countries of Southeast

sia. In order to get a statistical grip on the problem of poverty, the Council agreed to fine it as "an insufficient access to certain goods, services, and conditions of life which e available to everyone else and have come to be accepted as basic to a decent, minimum ndard of living". Thus stated, the definition begs many questions, most of which could come the subject of a long and inconclusive debate. Rather than engage in such a bate, the Council proceeded directly to a statistical embodiment of the definition suffi-ntly simple that it could be appreciated and judged by a broad public in relation to rsonal, everyday economic experience.

On the basis of information regarding family spending patterns, so-called "poverty es" were traced for individuals and families of different sizes. A basic assumption for the ain set of estimates was that any family or individual spending more than 70 p.c. of total come on food, clothing and shelter was in a low-income situation and likely to be suffering m poverty. These poverty lines were expressed in the *Fifth Review* in terms of 1961 llars; adjusted to dollars of 1968 purchasing power, they come out at $1,800 a year for a gle person, $3,000 for a family of two, $3,600 for a family of three, $4,200 for a family of r and $4,800 for a family of five. Obviously, these are conservative cut-offs; living ndards at or just above such levels would be modest indeed.

Using income data derived from the 1961 Census, it was possible to analyse some of e characteristics such as the age, sex and education of family heads, size of family, geo-aphical region of residence, and place of residence (metropolitan, other urban or rural) those falling below the poverty lines. As of 1961, some 916,000 non-farm families plus 6,000 individuals were living below these levels. The total number of persons involved s 4,200,000, including 1,700,000 children under 16 years of age. In all, they accounted some 27 p.c. of the total non-farm population of Canada in that year.

Statistics cannot adequately describe poverty but, used with care, they are capable furnishing important clues to types of policies likely to be effective against poverty.

It is evident from the incidence figures that income is more likely to be low when one more of the following characteristics are present: (1) the head of the family has no formal ucation beyond elementary school; (2) the family lives in a rural area; (3) the family lives the Atlantic Provinces; (4) the head of the family is not a member of the labour force; no member of the family worked during the year; (6) the head of the family is 65 years age or over; (7) the head of the family is a woman. From that list, it is all too easy to m a picture of poverty in Canada that consists of a relatively few stereotyped categories, t a more balanced picture of the total low-income population of Canada is necessary. view of the following observations, it is therefore vital in framing policy not to be over-uenced by rates of incidence: (1) 62 p.c. of the low-income non-farm families in 1961 ed in urban areas and of this group more than half lived in metropolitan areas; (2) 83 p.c. ow-income non-farm families lived elsewhere than in the Atlantic Provinces— 53 p.c. of m lived in Ontario and the Western Provinces; (3) 68 p.c. of the same group of families d heads who were in the labour force for at least part of the year; (4) 76 p.c. of the group d one or more earners in the family; (5) 77 p.c. of the family heads in the group were der 65 years of age; (6) 87 p.c. of the families in the group were headed by men. It can us be seen that a set of anti-poverty policies directed toward major groups or geographical as showing a very high incidence of low incomes would almost certainly fail to deal equately with poverty.

The Council called for a more concerted and purposeful attack on poverty in Canada. e challenge, in the short run, is to alleviate conditions which today thrust many Canadian nilies and individuals into involuntary poverty and hold them there. In the long run, challenge is to prevent the development of these conditions.

allenges for the 1970s

There are many economic challenges for Canada in the 1970s. A large number of m arise from questions about how Canadians wish to make use of their growing resources meet the future aspirations of their society. Another group of challenges are the

economic performance challenges which arise in the context of five basic economic a social goals—full employment, a high and sustained rate of economic growth, reasonal price stability, a viable balance-of-payments position, and an equitable distribution of risi incomes. The key requirement for sustained good performance in relation to these goals that they must be achieved concurrently, even though they are not all complementary a reinforcing.

To attain potential output in 1975, GNP (in constant 1969 dollars) will need to rise an average annual rate of about 5½ p.c. from 1969 to 1975. This would imply an increa (in terms of 1969 dollars) of over $30,000,000,000 to a level of close to $110,000,000,0 in 1975. Over the last half of the 1970s, the potential growth rate of the Canadian eco omy would still be high—over 5 p.c. This would imply a further increase in GNP in t latter part of the 1970s of about an equivalent real dollar magnitude, so that potent GNP by 1980 would be roughly of the order of $140,000,000,000 (in 1969 dollars).

A very large rise in employment will be needed to reach the full-employment potent of the economy by 1975—about 1,300,000 to 1,400,000 more jobs than existed in 197 Moreover, over the 1975-80 period, about 1,200,000 additional jobs will be required. other words, at least 2,500,000 net new jobs will be required in Canada over the comi decade.

A new ingredient in the challenges both for adequate job creation and for productivi growth in the 1970s will be the unprecedented flow into the labour markets of high-lev manpower from the post-secondary educational systems. The returns from the expansi in education could be substantial during the 1970s but greater attention needs to be dire ted to the possibilities here, and various adjustments are needed in the private and gover ment sectors of the economy in order to employ effectively and productively the rapid rising volume of high-level manpower.

No less important in the 1970s will be the challenge of reconciling good performan in price stability with good performance in relation to employment and growth potentia Full employment and price stability have never been regarded as "either/or" objectiv Rather, the essential challenge is to pursue both of these goals together in a balanced w and in a longer-run time perspective.

The maintenance of a strong international position will also be an important perfor ance challenge for the 1970s. Increased exports and the maintenance of adequate acc to external sources of capital are needed in order to finance both the increased imports goods and services that Canadians will demand and increased Canadian foreign investme and aid. Canada's potential in international trade in the 1970s cannot be achieved unl producers and exporters struggle unrelentingly, with appropriate supporting governme policies and programs, to enhance their competitiveness in domestic and world marke Moreover, they may well have to do so under conditions that may not be as favourab as in the 1960s, when the substantial devaluation of the Canadian dollar was an importa factor strengthening the international competitive position of many industries.

The more equitable distribution of rising incomes will undoubtedly come into great prominence as an economic and social goal in the 1970s. In particular, the challenges narrowing regional economic disparities and eliminating poverty clearly need, and w claim, increasing emphasis.

Commercial Policy Issues in the 1970s

Against the background of a substantial reduction in trade barriers since the Seco World War, Canada, like other industrial countries, has come to rely more and more foreign trade to sustain and improve its economic performance. Many factors besid commercial policy have, of course, contributed to Canada's trade growth, including t growth of domestic markets which have provided a stronger base for successful expo expansion in various industries. Exports now equal about half the goods of Canad goods-producing industries, and nearly half the goods supplied to Canadians are importe

rowth of exports and imports facilitates more efficient use of productive resources, per- its greater specialization, and helps to reduce costs and to increase real income per capita.

A strong upsurge of Canadian exports in the 1960s was led for the first time by ad- anced manufactures, and sustained by rising sales of industrial materials. Automotive d other highly manufactured products accounted for about 40 p.c. of the export total 1969.

In the past, Canadian commercial policy focused strongly on two themes: (1) negotia- n of reduced tariff and other barriers to its exports to foreign countries, particularly for source-based products in which it was considered that Canada had a "natural advan- ge"; and (2) the maintenance of protection for a considerable range of manufactured oducts. Only in more recent years, with the advent of the Kennedy Round and the ecial trade arrangements with the United States, has there been some tendency to focus *free* trade opportunities for exports and imports of manufactured products in order to in the benefits of specialization and large-scale production in the more advanced manu- cturing industries.

There are good economic reasons for dissatisfaction with some of the results of Cana- 's commercial policies—in particular the emergence of a high-cost structure of produc- n for advanced manufactures. Canada's manufacturing industries are often character- ed by small-scale—and, more important, by rather specialized—production and by high it costs, despite their advantages in supplies of basic materials and labour and their access first-rate technology.

There are four essentially unresolved problems from the 1960s that remain to be tackled ternationally: (1) improved arrangements for agricultural trade, particularly wheat, d grains and beef; (2) the reduction of non-tariff distortions in trade; (3) special trade rangements for developing countries; and (4) the modification of the preferential tariff stem and the resolution of other trade problems that would arise from British entry into e European Economic Community. Beyond these more immediate tasks, there is the re fundamental issue of how Canada will respond to the "new generation" of big in- strial markets, big international firms, and the acceleration of technological change. cess to a large market for industrial products will undoubtedly be even more important the future than it has been in the past.

It is relevant to recall that Canada's position among industrial countries has special tures: Canada is one of the few industrial countries without duty-free access to a large rket for all its manufactured products; Canada has some special trade arrangements h the United States which provide an integrated market for some manufactured prod- s; and Canadian duties in several trade sectors are sufficiently high for this country be regarded now as having a relatively high tariff.

In summary, the Council discerns three broad alternative paths along which world mmercial policy could develop: (1) a continued, gradual reduction of trade barriers such occurred between 1947 and 1967; (2) a positive and constructive response by the United tes and the EEC to the issue raised by the creation of a huge trading bloc in Western rope; and (3) a possible turn toward protectionist trade policies on the part of the United tes and/or the EEC.

tterns of Growth

One of the Council's principal duties is to advise on how to achieve high, stable, sus- ned and widely shared growth in the economy. This mandate implies that economic wth, especially productivity growth, provides an essential basis for meeting human ds and aspirations of many kinds—not only those reflected in material living standards also broader human and social aims in health and education, the reduction of large- le poverty, and other diverse goals. Since the inception of its work, the Council has oted considerable effort to the development of improved understanding of the nature l sources of growth and is continuing its work in this field by focusing attention on in-

dustrial growth patterns. The present analysis is directed mainly at clarifying the basic el ments in growth of labour and capital and the efficiency with which these have been us in major groups of industries over the past two decades.

The focusing of attention on industrial growth patterns is an initial step toward t future development of potential output analysis on an industry basis, taking into accou various important interrelationships between industries. Such analysis should provid by industries, estimates of future growth of output, investment and employment, consi tent with potential output for the whole economy.

For present purposes, ten "industry" groups under three broad headings have be chosen: (1) the *primary* industries, with agriculture, forestry and fishing treated as o group; (2) four groups of other *goods-producing* industries—mining, oil and gas, manufa turing, construction and utilities—as a second group; (3) five *service* industries—transpo tation, storage and communication; trade (wholesale and retail); finance, insurance a real estate; community, business and personal services; and public administration.

The Council calculated trends in annual growth rates of output by industry gro for the 1946-67 period. With the exception of the primary group, the over-all grow rates in current dollars for all industries fell into a range of 7 to 10 p.c.; for agricultur forestry and fishing combined, the growth rate was only about 2 p.c. Also, a rough es mate was made of what portion of the over-all growth rate was due to price increases. T general pattern is that the output of the goods industries grew more rapidly in real tern and had a lower price component; utilities and mining had the highest rates of growth i real output and relatively very small increases in prices; and in the service industries t price advance was generally much more pronounced.

Components of Growth

The growth analysis of these ten parts of the economy will follow the same approac used in the Council's earlier examinations of over-all economic growth. In this framewor growth is traced to changes over time in three broad groups of elements—labour, capit and factor productivity.

There appears to be an association between the scale of price increases indicated i some industries over the 1946-67 period and the extent to which these industries relied o particular growth elements more than on others. In general, price increases were le pronounced in the industry groups that experienced relatively high rates of growth i factor productivity. Price increases were highest over that period in the construction trade, public administration, financial, and community, business and personal service in dustries, and they generally obtained much of their growth over the postwar period wit higher labour inputs and relatively little improvement in factor productivity.

In the mining and utilities groups, increases in capital stock accounted for well ove half their total growth in the 1946-67 period and both groups had substantial gains i factor productivity and the lowest rates of price increase over that period.

The transportation, storage and communication industry, with a fairly small relianc on capital stock increases for its over-all growth, experienced a situation in which facto productivity accounted for about 60 p.c. of its total gain in average annual real outpu over the two decades.

Structural Shifts

The largest part of Canada's labour force is now engaged in the production of service Since the end of the Second World War, these service industries have increased their shar of total Canadian employment from about 40 p.c. to almost 60 p.c. Their proportion o the total value of output, which was approximately 50 p.c. in 1946, now is also approachin 60 p.c.

Subsection 2.—The Department of Regional Economic Expansion

The Department of Regional Economic Expansion, which is responsible for Federal overnment efforts to overcome regional economic disparities, came officially into existce on Apr. 1, 1969. However, the process of forming the new Department began in ly 1968 with the bringing together of a number of existing agencies and programs conrned with regional development.

These programs and agencies included the Agricultural and Rural Development Act RDA) and the Fund for Rural Economic Development (FRED) from the Department Forestry and Rural Development; the Area Development Agency (ADA) from the ien) Department of Industry; the Atlantic Development Board (ADB); the Experimental ojects Branch (Canada NewStart Program) from the Department of Manpower and Imgration; and the Prairie Farm Rehabilitation Administration (PFRA) from the Depart-nt of Agriculture. The Minister at the same time became responsible for the Cape eton Development Corporation (DEVCO), and the National Capital Commission (NCC).

The new Department was formally created by the Government Organization Act, 69 (SC 1968-69, c. 28), and this legislation also provided the Department with the first two major new weapons in the fight against regional disparities. This was the authority prepare and implement, in co-operation with the provincial governments and other leral agencies, development plans and programs designed to meet the special needs of eas where the growth of employment and incomes was lagging behind other parts of nada. The second major piece of legislation, the Regional Development Incentives t, was approved by Parliament in July 1969. This provides a strong and effective pro-m of industrial incentives to encourage manufacturing and processing industries to ablish, expand or modernize in parts of the country where new jobs are badly needed. e program provides generous capital grants of up to $12,000,000 to encourage firms to ate new jobs by establishing, expanding or modernizing manufacturing and most kinds processing plants in "designated regions" of the country. These designated regions lude all of the Atlantic Region, with the exception of Labrador, much of eastern Quebec, l parts of every other province.

The amount of incentive offered in an individual case is determined on the basis of an essment of the various financial and economic implications of the project. Factors alysed include such things as the economic impact of the project on the region concerned l the company's need for an incentive in order to create a viable operation in the desiged region. Experience to date has shown that the incentives available under the pro-m are able to exert a strong pull on industry to undertake new activity in the designated ions. In the period from the introduction of the program in July 1969 to Apr. 30, 1970, applicants accepted offers of incentives. These projects are expected to create more n 6,500 new jobs in various parts of the country when they go into production.

"Special Area" Program.—To make industrial incentives as effective as possible overcoming regional disparities, there must be centres in the slow-growth regions which attractive sites for industrial and population growth. These centres must be able to vide the utilities and services that industry requires, as well as a wide variety of social lities to meet the needs of a growing population. Therefore, one of the major purposes he Department's "special area" program is to ensure and speed the development of h centres by helping the provincial government to build up the essential municipal rices.

Under the program authorized by Part IV of the Government Organization Act, 0, special areas can be designated by the Federal Government, in co-operation with the vince concerned, where it is determined that special action is needed to promote eco-ic expansion and social adjustment. The "special action" involved is a development roach designed, through federal and provincial co-operation, to meet the needs of the concerned. Therefore, the type of federal action will vary from area to area acling to the need.

The first 22 special areas under the program were designated in March 1970 and federa provincial agreements have been signed covering specific infrastructure development pr jects to begin in 1970 in 18 of these areas. In the other four areas, the main federal a sistance will be in the form of incentives to industry. The agreements that have bee signed commit the Department to provide the various provinces with a total of up t $230,000,000 in grants and loans over the period to June 30, 1972. This is additional t any federal money that may be provided in industrial incentives. The agreements als call for the federal and provincial governments to co-operate in preparing further four-ye development plans for the areas involved. In addition, there will be consultation with th provinces regarding the possible designation of further special areas in the future.

Agricultural and Rural Development Act (ARDA).—ARDA is a federal-provinci shared-cost program in which all provinces have participated since its introduction in 196 The program to date has operated under two separate federal-provincial agreements, th first covering the period to 1965 and the second the 1965-70 period. Five-year ARD agreements for the 1970-75 period were signed with Ontario and British Columbia in Ma 1970. New agreements are expected with all provinces except Prince Edward Islan which is covered by a comprehensive rural development plan. The federal ARDA budg for the fiscal year 1970-71 is $25,000,000.

Canada Land Inventory (CLI).—The Canada Land Inventory, being undertake under the ARDA legislation, is a classification of more than 1,000,000 sq. miles of lan according to its capabilities for agriculture, forestry, recreation, wildlife and sport fis (see also p. 543). In addition, it includes one pilot-scale land-use planning project in eac province. The inventory data are being reproduced on conventional and computer-inpu maps as an aid to making decisions on land use. Inventory information is available t both the federal and provincial governments.

Fund for Rural Economic Development (FRED).—FRED was a federal fund o $300,000,000, established in 1966 to finance comprehensive federal-provincial developmer plans in various parts of the country. The FRED legislation was replaced, when th Department of Regional Economic Expansion was established, by the "special area powers given to the Department. Therefore, no new programs will be initiated unde FRED but the five programs already in operation, for terms ranging from five to 15 years will continue to completion, with financing through the Department's annual estimates the northeast and Mactaquac areas of New Brunswick; the Lower St. Lawrence–Gasp area of Quebec; the interlake area of Manitoba; and the whole of Prince Edward Islan

Prairie Farm Rehabilitation Administration (PFRA).—Since its creation i 1935, PFRA has turned 2,500,000 acres of marginal and submarginal land into communit pastures, and has been instrumental in the construction of many large irrigation and wate control projects, notably the Bow River and St. Mary irrigation schemes in Alberta, th South Saskatchewan River Project, the Shellmouth Dam and the Portage Diversion Projec At the farm level, PFRA has assisted 100,000 "dugout" projects for irrigation, stock watering and domestic water supplies. It has also distributed, free of charge, up t 10,000,000 seedlings a year for farm shelterbelts. PFRA continues as an entity within th organization of the Department of Regional Economic Expansion and has been given ne responsibility in implementing departmental programs in the Prairie Provinces.

Canada NewStart Program.—Part of the function of the Department's Social an Human Analysis Branch is to serve as the federal arm of "Canada NewStart" by helping t devise, test and apply programs that will motivate and train disadvantaged adults fo stable and rewarding employment. Professional staff act as consultants to the six New Start corporations that have been established in areas of New Brunswick, Nova Scotia Prince Edward Island, Manitoba, Saskatchewan and Alberta.

Newfoundland Resettlement Program.—This is a federal-provincial shared-cost ogram established to help people in Newfoundland move from areas where economic ospects are poor to other parts of the Island where there are better employment oppor- nities and public services.

Atlantic Development Council.—The Atlantic Development Board ceased to ist with the passage of the Government Organization Act, 1969, but projects begun by it e being continued by the Department. The Board's former advisory role is carried on the new 11-member Atlantic Development Council, appointed by the Federal Govern- ent in consultation with the governments of the Atlantic Provinces. It advises the inister of Regional Economic Expansion with regard to plans and programs for economic d social development and their effects on the region.

Canadian Council on Rural Development (CCRD).—The function of the CCRD to advise the Minister of Regional Economic Expansion on rural development policies; is composed of representatives of private organizations concerned with rural development, ho are appointed by the Minister to serve on the Council.

Subsection 3.—The Cape Breton Development Corporation

The Cape Breton Development Corporation was created by an Act of Parliament, sented to on July 7, 1967 (SC 1967-68, c. 6) and came into existence by proclamation on ct. 1, 1967, as a proprietary Crown corporation. The Corporation was established to omote and assist the financing and development of industry on the Island and to provide ployment outside the coal producing industry to broaden the base of the economy of e Island.

The Corporation has acquired the former interests of the major coal producer in the dney coalfield and, in accordance with its approved plan as required by Sect. 17 of the t, is operating and reorganizing four mines with a view to the rationalization of coal oduction.

The Act provides for a board of directors, comprised of a chairman, a president and e other directors. Head office is located in Sydney, N.S. The Corporation reports Parliament through the Minister of Regional Economic Expansion. Its operations are anced by the Government of Canada with some assistance from the Government of va Scotia for industrial development projects. During 1969, approximately $36,000,000 s expended for all purposes.

Subsection 4.—Provincial Government Economic Planning Agencies

In a number of provinces, economic planning agencies have been set up or are in the rmative stage. Only those that are currently active are described here. Other sources information on economic planning are listed in the Directory of Sources of Official formation in Chapter XXVII, under the heading "Economic Planning".

va Scotia Voluntary Economic Planning Board

The Voluntary Economic Planning Board (VEP), formed by an Act of the provincial gislature in 1963, is an autonomous body and represents non-government elements in e community. It was set up to enable the private sector to participate in the provincial nning process on a purely voluntary basis. Its purpose is to assist the government in eparing an economic development strategy for the province.

During the first years of its existence, it was, in effect, the only economic planning up in the province; it completed its first plan for the economic development of Nova otia in 1966. This plan, which set a number of growth targets for the provincial economy d outlined policies for future growth, emanated largely from the private sector and was

advisory to the government. The Board, however, was not set up to handle the on-goi economic planning for the province. This function has now been assumed by the provinci government (Cabinet Committee on Planning and Programs).

The Board's inputs into the provincial economic planning process now under wa are as follows:—

(1) Policies, strategies, proposals and/or recommendations emanating from segment ar sector committees are channelled through the Board to the Cabinet Committee on Planni and Programs.

(2) Simultaneously with (1), draft papers prepared by the government are forwarded to th Board for consideration at the sector and segment level. The relationship between gover ment planners and the economic "grass-roots" are now maintained by nine sector commi tees and 38 segment committees served by VEP sector secretaries. About 700 peop serve under the Board.

Quebec Planning and Development Board

An Act passed by the provincial Legislature in June 1968 authorized the establishmer of the Quebec Planning Board, which was set up in the same year. Under amendin legislation of June 9, 1969, this organization became the Quebec Planning and Developmer Board and, in addition to its previous functions, now includes ARDA and the Easter Quebec Development Board and is charged with the administration of special developmer funds such as those available under the Canada–Quebec agreement for the developmer of the Quebec City, Trois-Rivières and Sept Îles–Port Cartier areas of the province.

The Board is a corporate body administered by a director-general, who is chairma and five other members appointed by the Lieutenant-Governor in Council. It is authorize to act as an agent of government in the acquiring or disposing of goods on behalf of th government.

The functions of the Board are: to prepare plans, programs and projects for economi and social advancement and for area development, with the object of making the bes possible use of the natural and human resources of the province, and in so doing to gathe required information from provincial government departments and agencies on the policies, programs, projects and accomplishments; to undertake or commission research studies, surveys and inventories, the results of which are needed to carry out its functions and to co-ordinate like activities of other departments and agencies; to make recommenda tions to the government based on its own research and studies and advise the governmer on policies and programs prepared by other departments and agencies; to direct an implement the execution of any plan, program, project or development with which it i charged by the Lieutenant-Governor and to act as liaison between the departments c agencies involved; and to administer the funds made available to be used for the carryin out of its projects.

The Act authorizes the establishment of an Interdepartmental Planning and Develop ment Commission comprised of all Deputy Ministers of the Quebec Government whic will act as adviser to the Board on the conduct of its affairs.

The Ontario Economic Council

The Ontario Economic Council was formed initially by Order in Council on Feb. 1, 1962 and established by An Act to Establish the Ontario Economic Council on May 30, 1968 The Council was conceived as a vehicle whereby representatives of a broad cross-section c knowledgeable persons throughout the province could pool their information and experienc regarding social and economic matters, commission research and formulate policy recom mendations to the public and private sectors.

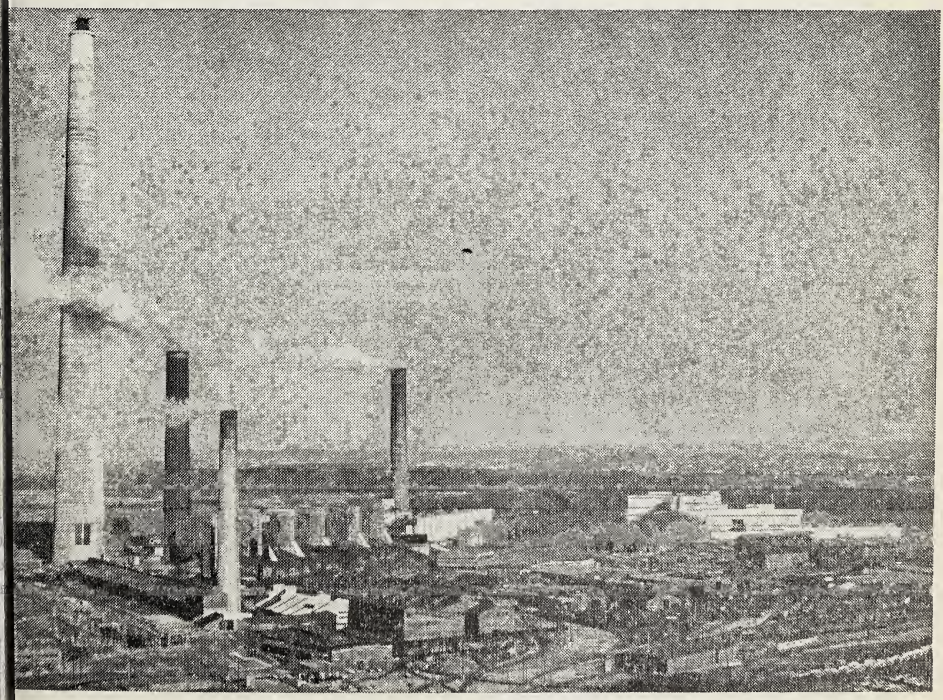
Twenty Ontario citizens serve as members of the Council: six represent business and industry; one each the financial community and the Consumers' Association of Canada three, organized labour; three, agriculture; and one, the provincial universities. On member comes from the senior ranks of the Ontario Civil Service and the remaining fou are drawn from the Ontario Research Foundation, the Ontario Regional Developmen Council, The Hydro-Electric Power Commission of Ontario, and the Ontario Northland

ilway. Each serves as an individual citizen without compensation for a term of one, o or three years. The Council meets monthly in Toronto.

Essentially, the Council operates as an advisory body to the Government of Ontario. me of its findings are reported directly to the government; other reports and recommendations are published and distributed more widely. Recent reports cover the fields of immiation, forestry policy, reform of government, poverty, transfer taxation, education, labour, ll-training and plant location. Also published, annually between 1965-69 and now nnially, is an index of research projects carried on within provincial government agencies d departments and certain industrial companies operating in Ontario.

The Council shares the view of the Government of Ontario that the economy of Ontario not an entity separate from Canada. For this reason the Council does not undertake parately for Ontario what the Economic Council of Canada has done and is doing for nada as a whole. Projects are undertaken with the Economic Council of Canada on a operative basis and information is exchanged between the two Councils. Another way which the Ontario Economic Council pursues its responsibilities is through the work of *hoc* committees which involve a broad cross-section of the Ontario community.

A small permanent Council staff undertakes direct assignments and superintends the sign and administration of projects assigned to others. Close contact with government partments avoids unnecessary duplication of effort. Research facilities, academic rsonnel and graduate students in Ontario universities have been used for certain projects, ich have included the professional services of members of the departments of economics, litical science, geography and business administration in provincial universities. From ne to time, the Council engages the professional services of private consulting firms.



new 1,250-foot stack at the Copper Cliff nickel smelter looks down on three smaller stacks it will replace. multi-million-dollar answer to the challenge of pollution control, when fully operational in 1971, will result in the extraction of 40 p.c. of the sulphur in the smelter gases.

CHAPTER XXV.—BANKING, OTHER COMMERCIAL FINANCE AND INSURANCE

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

PART I.—BANKING AND OTHER COMMERCIAL FINANCE

Section 1.—Banking

Subsection 1.—The Bank of Canada*

Canada's central bank, the Bank of Canada, began operations on Mar. 11, 1935 under the terms of the Bank of Canada Act of 1934 which charged it with the responsibility for regulating "credit and currency in the best interests of the economic life of the nation" and conferred on it specific powers for discharging this responsibility. Through the exercise of these powers, the Bank broadly determines the combined total of the most common forms of Canadian money held by the community—chartered bank deposits and currency. The 1967 revision of the Bank of Canada Act contained a number of technical amendments designed to assist the Bank in discharging its responsibilities and account is taken of these changes in the following description of the Bank's operations.

The provisions of the Bank of Canada Act enable the central bank to determine the total amount of cash reserves available to the chartered banks as a group and thus to control the rate of expansion of the total assets and deposit liabilities of the banking system

* Revised (December 1970) by the Research Department of the Bank of Canada.

a whole. The Bank Act, which regulates the operation of the chartered banks, requires
at each chartered bank maintain a stipulated minimum average amount of cash reserves,
culated as a percentage of its Canadian dollar deposit liabilities, in the form of deposits
the Bank of Canada and holdings of Bank of Canada notes. (The minimum cash
erve requirement, which came into effect under the new legislation beginning Feb. 1,
38, is 12 p.c. of demand deposits and 4 p.c. of other deposits.) The ability of the chartered
nks as a group to expand their total assets and deposit liabilities is therefore limited by
e total amount of cash reserves available. An increase in cash reserves will encourage
e banks as a group to expand their total assets (which consist chiefly of loans and market-
le securities) with a concomitant increase in their deposit liabilities; a decrease in cash
erves will bring about a decline in their total assets and deposit liabilities as they seek
restore their cash reserve ratios.

The chief method by which the Bank of Canada alters the level of cash reserves of
e chartered banks, and through them the total of chartered bank deposits, is by pur-
ases and sales of government securities. Payment by the central bank for the securities
purchases in the market adds to the cash reserves of the chartered banks as a group and
ts them in a position to expand their assets and deposit liabilities. Conversely, pay-
nt to the central bank for securities it sells causes a reduction in the cash reserves of
e chartered banks and requires them to reduce their holdings of assets and deposit
bilities.

The influence that the Bank of Canada exerts on credit conditions (i.e., on the interest
t and other terms of borrowing in financial markets) stems from its ability to limit
e growth of bank credit and of the community's holdings of bank deposits and currency.
e growth rate of the banking system is one of the factors exerting an important influence
the level of interest rates and other terms of access to credit prevailing in financial
rkets generally. Current credit conditions (and expectations about future trends in
h conditions) in turn have an influence on business and household decisions to spend
to save. Many other factors also have an important effect on spending decisions,
wever, and the behaviour of the economy is subject as well to such influences as economic
l financial developments abroad; the investment, price and wage policies of business
ns in Canada; and the character of public policies at all levels of government with regard
expenditure and taxation. In using the powers at its disposal, the Bank attempts to
p bring about credit conditions appropriate to both domestic and external conditions.
operations must be based, not on any simple mechanical formula, but rather on con-
uous observation and appraisal of the constantly changing prospects for the economy
reflected in the complex pattern of economic and financial developments.

In a technical sense, the powers which the central bank possesses allow it to exert a
ong influence over economic activity but, in practice, the range through which credit
nditions can be permitted to vary is necessarily limited. Changes in credit conditions
Canada affect the position of some groups in the economy much more than that of others,
l this uneven impact is bound to inhibit the central bank's operations. Furthermore,
erest rates in Canada cannot change greatly in relation to those abroad without producing
ge capital movements which might complicate Canada's international payments position.
ese considerations suggest that monetary policy must be used in appropriate combina-
n with other public economic policies in order to help achieve national economic goals.

Although the Bank of Canada has the power to determine the rate of growth of the
mbined total of currency and chartered bank deposits, it has no means of determining
w much of this total is held in the form of currency and how much in the form of chartered
nk deposits. This depends entirely on the preferences of the public, since bank deposits
be converted freely into notes and coin and back again.

Although the cash reserve system in Canada—which is similar to that in a number of
er countries—enables the central bank to determine within broad limits the total
ount of chartered bank assets and deposit liabilities, the Bank of Canada leaves the
cation of bank and other forms of credit to the private sector of the economy. Each

chartered bank is free to attempt to gain as large a share as possible of the total cash r serves available by competing for deposits and to decide what proportion of its funds t invest in particular kinds of securities and in loans to particular types of borrowers. Th influence of the central bank—based in essence on its power to expand or contract charter bank cash reserves through its market purchases or sales of securities—is both indire and impersonal and is brought to bear on financial conditions generally through the cha tered banks and the numerous inter-connected channels of the capital market.

The powers of the Bank are contained in the Bank of Canada Act, 1934 (RSC 195 c. 13), revisions in which were made in 1936, 1938, 1954 and 1967. Some of these powe are outlined below.

The Bank may buy or sell securities issued or guaranteed by Canada or any provinc short-term securities issued by Britain, treasury bills or other obligations of the Unite States and certain types of short-term commercial paper. The Industrial Developme Bank Act authorizes the Bank to purchase securities issued by that institution. Th Bank may buy or sell gold, silver, nickel and bronze coin, or any other coin, and gol and silver bullion as well as foreign exchange and may accept non-interest-bearing deposit from the Government of Canada, the government of any province, any chartered ban and any bank regulated by the Quebec Savings Bank Act. The Bank may open account in other central banks. It may accept deposits from other central banks, the Internation Monetary Fund, the International Bank for Reconstruction and Development, and an other official international financial organization, and it may pay interest on such deposits The Bank does not accept deposits from individuals nor does it compete with the charter banks in the commercial banking field. The Bank acts as the fiscal agent for the Govern ment of Canada in the payment of interest and principal and generally in respect of th management of the public debt of Canada. The sole right to issue paper money for circula tion in Canada is vested in the Bank.

The Bank of Canada may require the chartered banks to maintain, in addition t the legal minimum cash reserve requirement mentioned above, a secondary reserve whic the Bank may vary within certain limits. The secondary reserve, which consists of cas reserves in excess of the minimum requirement, treasury bills and day-to-day loans t investment dealers, cannot be more than 6 p.c. of total deposits when first introduced no can it exceed 12 p.c.; effective April 1968, the required level was 7 p.c. In the event th Bank wishes to introduce or increase the secondary reserve requirement, one month' notice to the chartered banks is required; the amount of any increase in the requiremen cannot exceed 1 p.c. per month. In the case of a lowering of the secondary reserve require ment, however, the percentage change in any one month is not restricted.

The Bank of Canada may make loans or advances for periods not exceeding six month to chartered banks, or to banks to which the Quebec Savings Bank Act applies, on th pledge of certain classes of securities. Loans or advances may be made under certain conditions and for limited periods to the Government of Canada or of any province. The Bank of Canada is required to make public at all times the minimum rate at which it is prepared to make loans or advances; this rate is known as the Bank Rate. From Nov. 1, 1956 until June 24, 1962, the Bank Rate was established weekly at a fixed margin of ¼ of 1 p.c. above the latest weekly average tender rate for 91-day treasury bills. Since June 24, 1962, the Bank Rate has been fixed from time to time as follows:—

Date of Change	Per Cent per Annum
June 24, 1962.....	6.00
Sept. 7, 1962.....	5.50
Oct. 12, 1962.....	5.00
Nov. 13, 1962.....	4.00
May 6, 1963.....	3.50
Aug. 12, 1963.....	4.00
Nov. 24, 1964.....	4.25
Dec. 6, 1965.....	4.75
Nov. 14, 1966.....	5.25
Jan. 30, 1967.....	5.00
Apr. 7, 1967.....	4.50
Sept. 27, 1967.....	5.00
Nov. 20, 1967.....	6.00
Jan. 22, 1968.....	7.00
Mar. 15, 1968.....	7.50
July 2, 1968.....	7.00
July 29, 1968.....	6.50
Sept. 3, 1968.....	6.00
Dec. 18, 1968.....	6.50
Mar. 3, 1969.....	7.00
June 11, 1969.....	7.50
July 16, 1969.....	8.00
May 12, 1969.....	7.50
June 1, 1970.....	7.00
Sept. 1, 1970.....	6.50
Nov. 12, 1970.....	6.00

From June 24, 1962 to Nov. 12, 1970, the Money Market Rate—the rate at which the ınk of Canada is prepared to enter into purchase and resale agreements with money-ırket dealers—was either $\frac{1}{4}$ of 1 p.c. above the average rate on 91-day treasury bills at e preceding weekly tender or the Bank Rate, whichever was lower; since Nov. 12, 1970, e minimum rate is the Bank Rate less $\frac{3}{4}$ of 1 p.c.

The Bank of Canada is not required to maintain gold or foreign exchange reserves ainst its liabilities.

Prior to the 1967 amendment of the Bank of Canada Act, there existed some un-rtainty about the exact relationship between the central bank and the Government. ıe changes in the Bank of Canada Act in 1967 were designed to clarify this matter. ıey provide for regular consultation between the Governor of the Bank and the Minister Finance as well as for a formal procedure whereby, in the event of a disagreement between e Government and the Bank which cannot be resolved, the Government may, after further nsultation has taken place, issue a directive to the Bank as to the monetary policy that is to follow. Any such directive must be in writing, it must be in specific terms, and it ıst be applicable for a specified period. It must be published immediately in the *Canada zette* and tabled in Parliament. The amendment makes it clear that the Government ıst take the ultimate responsibility for monetary policy and it provides a mechanism r that purpose but the central bank is in no way relieved of its responsibility for monetary licy and its execution.

1.—Assets and Liabilities of the Bank of Canada, as at Dec. 31, 1965-69

Item	1965	1966	1967	1968	1969
	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000
Assets					
reign exchange	28.3	55.2	90.9	95.9	79.4
vances to chartered and savings banks	—	—	3.0	5.0	0.9
is bought in open market, excluding treasury ills	—	—	—	—	2.6
estments—					
Treasury bills of Canada	608.1	409.1	538.3	453.4	477.7
Other securities issued or guaranteed by Canada maturing within 3 years	815.8	1,142.9	1,269.7	1,540.9	1,929.6
Other securities issued or guaranteed by Canada not maturing within 3 years	1,992.7	1,867.2	1,940.1	1,890.3	1,650.5
Bonds and debentures issued by Industrial Development Bank	200.7	239.8	270.2	305.0	351.3
Other securities	14.0	171.7	10.7	10.8	81.2
ustrial Development Bank capital stock	39.0	42.0	45.0	49.0	52.0
nk premises	16.3	16.5	17.3	22.2	24.2
other assets	240.9	262.3	226.3	263.1	238.9
Totals, Assets	**3,955.8**	**4,206.8**	**4,411.6**	**4,635.6**	**4,888.3**
Liabilities					
pital paid up	5.0	5.0	5.0	5.0	5.0
st Fund	25.0	25.0	25.0	25.0	25.0
tes in Circulation—					
eld by chartered banks	382.7	438.1	484.6	568.9	543.5
ll other	2,152.9	2,295.5	2,494.4	2,660.3	2,902.7
posits—					
overnment of Canada	116.2	34.1	42.2	47.4	80.9
hartered banks	1,034.2	1,111.3	1,062.0	1,114.3	1,108.8
ther	34.5	29.7	37.9	38.4	42.0
eign currency liabilities	30.8	36.9	34.8	28.3	23.6
other liabilities	174.3	231.2	225.8	147.9	156.7
Totals, Liabilities	**3,955.8**	**4,206.8**	**4,411.6**	**4,635.6**	**4,888.3**

The Bank is under the management of a Board of Directors composed of a Governor, Deputy Governor and twelve Directors. The Governor and Deputy Governor are

appointed for terms of seven years each by the Directors, with the approval of the Gover in Council. The Directors are appointed by the Minister of Finance, with the appro of the Governor in Council, for terms of three years each. The Deputy Minister Finance is a member of the Board but does not have the right to vote. There is an Exe tive Committee of the Board composed of the Governor, the Deputy Governor, two Dir tors and the Deputy Minister of Finance (who is without a vote); this Committee has t same powers as the Board except that its decisions must be submitted to the Board at next meeting. In addition to the Deputy Governor who is a member of the Board, th may be one or more Deputy Governors appointed by the Board of Directors to perfo such duties as are assigned by the Board.

The head office of the Bank is in Ottawa. It has agencies in Halifax, Saint Jo Montreal, Ottawa, Toronto, Winnipeg, Regina, Calgary and Vancouver and is represent in St. John's and Charlottetown.

The Industrial Development Bank.—The Industrial Development Bank, a su sidiary of the Bank of Canada, was incorporated by Act of Parliament during 1944 a its banking operations commenced on Nov. 1, 1944. Its functions are described in t preamble to the Act as follows:—

> To promote the economic welfare of Canada by increasing the effectiveness of moneta action through ensuring the availability of credit to industrial enterprises which may reasonab be expected to prove successful if a high level of national income and employment is maintaine by supplementing the activities of other lenders and by providing capital assistance to indust with particular consideration to the financing problems of small enterprises.

The President of the Industrial Development Bank is the Governor of the Bank Canada and the Directors are the Directors of the Bank of Canada and the Dep Minister of Industry, Trade and Commerce. The authorized capital of the Bank $75,000,000 and it may also raise funds by the issue of bonds and debentures provide that its total direct liabilities and contingent liabilities in the form of guarantees an underwriting agreements do not exceed ten times the aggregate of the Bank's paid-u capital and Reserve Fund.

The Bank may extend financial assistance to industrial enterprises in Canada whic by definition in the Act, include any industry, trade or other business undertaking o any kind. With respect to such enterprises, the Bank is empowered to lend money o guarantee loans and where an enterprise is a corporation the Bank may also enter int underwriting agreements with regard to any issue of stock, bonds or debentures; acqui stock, bonds or debentures from the issuing corporation or any person with whom th Bank has entered into an underwriting agreement; and acquire certificates issued by trustee to finance the purchase of transportation equipment. The total amount of com mitments of the Bank, in the form of loans, guarantees, etc., in excess of $200,000 eac may not exceed $200,000,000.

The Bank may accept any form of collateral security against its advances, includin realty and chattel mortgages which constitute the usual kind of security taken. Th Bank is intended to supplement the activities of other lending agencies, not to compet with them, and the Act of incorporation provides that it should extend credit only whe in the Bank's opinion, credit or other financial resources would not otherwise be availabl on reasonable terms and conditions. Its lending takes the form of fixed-term capita loans rather than current operating loans. The Bank is specifically prohibited fro engaging in the business of deposit banking. It has branch offices in the following cities St. John's, Halifax, Saint John, Moncton, Rimouski, Quebec, Trois-Rivières, Montrea

erbrooke, Ottawa, Toronto, Hamilton, Waterloo, London, Windsor, Sudbury, Thunder y, Winnipeg, Regina, Saskatoon, Calgary, Edmonton, Kelowna, Vancouver, Victoria d Prince George.

2.—Assets and Liabilities of the Industrial Development Bank, as at Sept. 30, 1966-70

Item	1966	1967	1968	1969	1970
	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000
sets—					
Loans outstanding[1,2]	298.2	334.3	370.9	418.9	487.2
Other assets	6.9	6.5	8.0	4.1	10.8
Totals, Assets	**305.1**	**340.8**	**378.9**	**423.0**	**498.0**
abilities—					
Capital and reserves	66.2	71.1	76.1	81.0	84.7
Bonds and debentures outstanding	232.8	262.5	293.6	331.5	394.1
Other liabilities	6.1	7.2	9.2	10.5	19.1
Totals, Liabilities	**305.1**	**340.8**	**378.9**	**423.0**	**498.0**
an Transactions—					
Disbursements[1]	98.1	96.6	105.5	122.4	151.0
Repayments[1]	55.2	61.1	69.7	74.6	81.7
Loans outstanding plus undistributed authorizations[1]	350.6	388.6	427.0	489.5	556.3
	No.	No.	No.	No.	No.
stomers on books	7,870	8,595	9,511	10,629	12,285

[1] Includes investments; the change in loans outstanding does not equal the difference between disbursements and repayments because of year-end accounting adjustments. [2] Includes agreements of sale.

Subsection 2.—Currency

Note Circulation.—The development by which bank notes became the chief circuing medium in Canada prior to 1935 is described in the 1938 Year Book, pp. 900-905. ose features of the development which then became permanent are outlined in the 1941 ar Book, pp. 809-810.

When the Bank of Canada commenced operations in 1935 it assumed liability for minion notes outstanding. These were replaced in public circulation and partly replaced cash reserves by the Bank's legal tender notes in denominations of $1, $2, $5, $10, $20, 0 and $100. Deposits of chartered banks at the Bank of Canada completed the replacent of the old Dominion notes of $1,000 to $50,000 denomination that had previously en used as cash reserves. The chartered banks were required under the Bank Act of 34 to reduce gradually the issue of their own bank notes during the years 1935-45 to an nount not in excess of 25 p.c. of their paid-up capital on Mar. 11, 1935. Bank of Canada tes thus replaced chartered bank notes as the issue of the latter was reduced. Further trictions introduced by the 1944 revision of the Bank Act cancelled the right of chartered nks to issue or re-issue notes after Jan. 1, 1945, and in January 1950 the chartered banks' bility for such of their notes issued for circulation in Canada as then remained outnding was transferred to the Bank of Canada in return for payment of a like sum to e Bank of Canada.

3.—Bank of Canada Note Liabilities, as at Dec. 31, 1965-69

Denomination	1965	1966	1967	1968	1969
	$'000	$'000	$'000	$'000	$'000
Bank of Canada Notes—					
$1	103,115	109,846	129,473	136,753	140,4
$2	73,328	78,874	84,513	91,188	95,9
$5	183,057	196,893	209,392	223,350	229,2
$10	608,351	668,153	692,823	733,695	741,2
$20	904,872	983,765	1,110,604	1,230,585	1,335,4
$25	46	46	46	46	
$50	173,580	188,131	203,239	218,300	238,3
$100	453,687	471,550	508,068	549,923	613,4
$500	33	33	33	32	
$1,000	22,597	23,377	27,805	32,412	39,0
Totals	2,522,666	2,720,668	2,965,996	3,216,284	3,433,2
Note issues in process of retirement[1]	12,984	12,966	12,944	12,927	12,9
Totals, Bank of Canada Note Liabilities	**2,535,650**	**2,733,634**	**2,978,940**	**3,229,211**	**3,446,1**
Held by—					
Chartered banks	382,703	438,090	484,566	568,923	543,4
Others	2,152,947	2,295,544	2,494,374	2,660,288	2,902,7

[1] Includes, in 1969, chartered banks' notes $8,162,000, Dominion of Canada notes $4,636,000, provincial no $28,000 and defunct banks' notes $88,000; these amounts have changed little in recent years.

4.—Note Circulation in the Hands of the Public, as at Dec. 31, 1960-69

As at Dec. 31—	Bank of Canada Notes[1]	Per Capita[2]	As at Dec. 31—	Bank of Canada Notes[1]	Per Capita
	$	$		$	$
1960	1,731,902,386	96.92	1965	2,152,947,110	109.60
1961	1,800,190,122	98.71	1966	2,295,543,656	114.69
1962	1,816,977,132	97.78	1967	2,494,373,617	122.24
1963	1,886,238,792	99.64	1968	2,660,288,295	128.24
1964	2,025,473,300	105.00	1969	2,902,725,525	137.82

[1] Total issue less notes held by chartered banks. [2] Based on official estimates of population (see p. 24

Coinage.*—Under an amendment to the Currency, Mint and Exchange Fund A (RSC 1952, c. 315), assented to Mar. 7, 1968, gold coins may be issued in the denominatio of twenty dollars (nine tenths fine or millesimal fineness 900); subsidiary coins in denomin tions of one dollar, 50 cents, 25 cents, 10 cents (five tenths fine or millesimal fineness 50 or pure nickel); pure nickel five-cent coins; and bronze (copper, tin and zinc) one-cent coin Provision is made for the temporary alteration of composition in the event of a shortag of prescribed metals. A tender of payment of money in coins is a legal tender in the cas of gold coins issued under the authority of Sect. 4 of the Currency, Mint and Exchang Fund Act for the payment of any amount; in the case of silver coins for the payment of a amount up to $10; nickel coins for payment up to $5; and bronze coins up to 25 cents.

* Revised by the Master of the Royal Canadian Mint, Ottawa.

5.—Canadian Coin in Circulation, as at Dec. 31, 1960-69

NOTE.—The figures shown are of net issues of coin.

s at Dec. 31—	Silver	Nickel	Tombac[1]	Steel	Bronze	Total	Per Capita
	$	$	$	$	$	$	$
.....	136,710,958	11,599,263	549,090	3,452,876	16,895,953	169,208,140	9.47
.....	146,902,352	14,110,198	549,021	3,451,708	18,311,853	183,325,132	10.05
.....	162,928,707	16,433,088	549,009	3,450,676	20,595,543	203,957,023	10.98
.....	180,492,972	18,627,687	548,999	3,449,476	23,383,788	226,502,922	11.99
.....	206,551,965	22,522,116	548,996	3,448,547	28,009,356	261,080,980	13.57
.....	239,927,246	26,397,784	548,989	3,447,516	30,968,064	301,289,599	15.39
.....	263,556,870	27,052,019	548,987	3,446,704	33,106,994	327,711,574	16.37
.....	290,767,343	29,994,420	548,986	3,445,905	36,556,981	361,313,635	17.51
.....	316,836,513	75,463,808	548,984	3,445,019	39,705,272	435,999,596	20.82
.....	316,714,891	117,198,594	548,983	3,444,330	43,004,210	480,911,008	22.62

[1] Tombac, a copper-zinc alloy, was used to conserve nickel for war purposes; no coins of this metal have been d since 1944.

The Royal Canadian Mint.—The Ottawa Mint, established as a branch of the yal Mint under the (Imperial) Coinage Act of 1870, was opened on Jan. 2, 1908. On . 1, 1931, it became the Royal Canadian Mint and operated as a branch of the Depart- nt of Finance. Under the provisions of the Government Organization Act, 1969, the nt was established as a Crown (agency) corporation, reporting to Parliament through Minister of Supply and Services. The latter change was designed to provide for a more ustrial type of organization and for flexibility in producing coins of Canada and other ntries; buying, selling, melting, assaying and refining gold and precious metals; and ducing medals, plaques and other devices.

The Master of the Mint is its chief executive officer and one of a Board of seven Direc- appointed by the Governor in Council. The Master of the Mint is appointed to hold e during pleasure, the Chairman of the Board is appointed for a term of four years ject to re-appointment, and the other five Directors for terms of one to three years.

Financial and budgeting arrangements are similar to those of other Crown companies ying on industrial or commercial operations. Loans are made from the Consolidated enue Fund for operating and capital expenses, with the total outstanding at any time ted to $35,000,000. Provision is made for loans for temporary purposes and a reserve stablished against losses. Operations are conducted with the aim of making a small it.

6.—Receipts of Gold Bullion at the Royal Canadian Mint and Bullion and Coinage Issued, 1960-69

Year	Gold Received	Gold Bullion Issued	Silver Coin Issued	Nickel Coin Issued	Bronze Coin Issued
	oz. t.	oz. t.	$	$	$
.....	4,024,626	4,014,771	13,432,251	1,735,707	748,101
.....	3,800,137	3,812,054	10,299,581	2,512,369	1,417,544
.....	3,488,974	3,520,406	16,114,240	2,324,212	2,284,925
.....	3,457,092	3,467,554	17,688,668	2,196,217	2,790,679
.....	3,188,868	3,173,573	26,153,154	3,895,746	4,626,963
.....	2,991,450	3,026,974	33,479,378	3,877,921	2,961,126
.....	2,676,402	2,631,400	23,722,162	655,948	2,140,711
.....	2,438,512	2,287,687	27,322,321	2,944,242	3,451,406
.....	2,236,722	2,221,589	26,167,289	45,472,245	3,150,062
.....	2,146,507	2,089,226	—	41,740,879	3,300,505

Dollar Currency and Bank Deposits.—Bank of Canada statistics concerning ency and chartered bank deposits are given in Table 7.

7.—Canadian Dollar Currency and Chartered Bank Deposits, as at Dec. 31, 1960-69

(Millions of dollars)

As at Dec. 31—	Currency Outside Banks			Chartered Bank Deposits				Total Currency and Chartered Bank Deposits[1]		
	Notes	Coin	Total	Personal Savings Deposits	Government of Canada Deposits	Other Deposits[1]	Total[1]	Total Including Government Deposits	Held by General Public	
									Including Personal Savings Deposits	Excluding Personal Savings Deposits
1960	1,732	144	1,876	7,215	510	4,313	12,037	13,914	13,404	6,1
1961	1,800	158	1,959	7,618	588	4,998	13,205	15,163	14,575	6,9
1962	1,817	177	1,994	7,932	564	5,193	13,689	15,683	15,119	7,1
1963	1,886	198	2,084	8,443	914	5,623	14,980	17,064	16,150	7,7
1964	2,025	229	2,254	8,935	696	6,164	15,795	18,049	17,353	8,4
1965	2,153	266	2,419	9,725	797	7,201	17,723	20,142	19,345	7,5
1966	2,296	293	2,589	10,248	919	7,741	18,908	21,497	20,578	10,3
1967	2,494	335	2,829	11,760	618	9,096	21,473	24,302	23,685	11,9
1968	2,660	399	3,059	13,622	669	10,507	24,798	27,857	27,188	13,5
1969	2,903	434	3,337	15,030	1,308	9,540	25,897	29,214	27,906	12,8

[1] Less total float, i.e., cheques and other items in transit.

Subsection 3.—The Chartered Banks

Canada's commercial banking system consists of nine privately owned banks. Eigh have been in operation for many years and one commenced operations in July 1968. At th end of December 1969, these banks operated 6,038 banking offices in Canada and 20 abroad. Canadian chartered banks engage in a very wide range of activities; they accep various types of deposits from the public including accounts payable on demand, bot chequing and non-chequing, notice deposits and fixed-term deposits. The banks, i addition to holding a portfolio of securities, make loans under a wide variety of condition for commercial, industrial, agricultural and consumer purposes. They also deal in foreig exchange, receive and pay out bank notes, provide safekeeping facilities and perform variety of other services. For the most part, these operations are carried out in Canad by the extensive network of bank branches. The head offices of the banks confine the activities largely to general administration and policy-making functions, the manageme of the banks' investment portfolio and related matters. A detailed account of the branc banking system in Canada is given in the 1967 Year Book, pp. 1126-1128.

All banks operating in Canada are chartered (i.e., licensed) by Parliament und the terms of the Bank Act. The Act regulates certain internal aspects of bank operation such as the auditing of accounts, the issuing of stock, the setting aside of reserves an similar matters. In addition, the Bank Act regulates the banks' relationship with th public, the Government and the Bank of Canada.

It has been the practice in Canada to revise the Bank Act at approximately ten-yea intervals. The most recent revision was enacted by Parliament early in 1967 and cam into effect on May 1 of that year. The remainder of this Subsection deals with the principa changes incorporated in the new Bank Act.

Acceptance by the Government of some of the main recommendations of the Roya Commission on Banking and Finance for increased competition and flexibility in the Cana dian banking system was reflected in various new Bank Act provisions. These impose certain restrictions on corporate and other relationships between banks and other financia institutions, while removing certain existing restrictions on the banks' operations whic had placed them at some competitive disadvantage in recent years compared with thei principal financial competitors.

In the past, various forms of intercorporate financial relationship between chartered nks and other financial enterprises had developed in Canada. In some instances this volved investment by banks in the shares of these enterprises, and vice versa; in others e relationship involved interlocking directorships. These practices are severely re-icted under the terms of the new Bank Act, which limits bank ownership of any Canadian rporation to 10 p.c. of the voting shares and also provides that no more than one fifth the directors of any company may become directors of a bank. In addition, after a o-year period a director of a trust or mortgage loan company which accepts deposits m the public may not be appointed or elected a director of a bank. In order to ensure at competition is not curtailed by agreements among the banks on interest rates to be id on deposits or charged for loans, the new Bank Act prohibits the making of such reements (except with the consent of the Minister of Finance). At the same time the ovision that was formerly in the Bank Act limiting to 6 p.c. the interest rate which artered banks could charge on loans, was abolished effective Jan. 1, 1968. Under the new nk Act, the determination of interest rates on loans and deposits is left to market forces.

The new Bank Act also granted the banks new mortgage-lending powers. Banks y now charge current rates of interest on mortgage loans under the National Housing t, and they may also make conventional residential mortgage loans for the first time. the case of conventional residential mortgages, the amount of an individual mortgage not exceed 75 p.c. of the appraised value of the property. After 1973 the maximum ount of a bank's assets to be held in the form of conventional residential mortgages st not be more than 10 p.c. of the bank's Canadian dollar deposit liabilities plus de-ntures. In the interval, the percentage limitation will rise by 1 p.c. each fiscal year; was 4 p.c. until Oct. 31, 1968 when it rose to 5 p.c. for the subsequent fiscal year and will continue until the 10-p.c. maximum is reached.

The banks have also been given authority to issue their own debentures with an ginal term to maturity of at least five years; such securities are not subject to a reserve uirement and rank in priority after deposit liabilities. The amount of debentures t any bank may have outstanding is limited by restricting the increase per annum to p.c. of the paid-up capital and rest fund and an upper limit of one half of the bank's d-up capital and rest fund.

The amendments to the Bank Act in 1967 contained a number of revisions respecting ownership of Canadian chartered banks. No individual or associated shareholders y vote more than 10 p.c. of a bank's total shares outstanding and, if more than 25 p.c. a bank's shares are owned by non-residents, the total outstanding liabilities of the bank y not exceed twenty times its authorized capital stock.

The Bank Act also stipulates the minimum statutory cash reserve requirement that chartered banks must observe. The minimum amount of Bank of Canada notes and posits each bank must hold as cash reserves was changed in a series of monthly steps m 8 p.c. of all Canadian dollar deposits under the old Bank Act to 12 p.c. of demand posits and 4 p.c. of other deposits as of February 1968. In addition, the Bank of Canada been given stand-by powers to require the banks to hold a "secondary reserve" which ld consist of cash in excess of their statutory requirements, holdings of treasury bills day-to-day loans to investment dealers. When initially introduced, this secondary rve cannot exceed 6 p.c. of a bank's deposit liabilities. Thereafter it may be increased nonthly steps of 1 p.c. to a maximum of 12 p.c. The Bank of Canada may reduce or ove such a secondary reserve at any time. Effective April 1968, the required level was .c. and, effective June 1969, it was increased to 8 p.c.

Branches of Chartered Banks.—Although there are fewer chartered banks now n at the beginning of the century, there has been a great increase in the number of nch banking offices. As a result of amalgamations, the number of banks declined from n 1901 to 10 in 1931, and remained at that figure until the incorporation of a new bank—e Mercantile Bank of Canada—in 1953 brought the total to 11. Since then the amal-nation in 1955 of the Bank of Toronto and the Dominion Bank as The Toronto-

Dominion Bank, the amalgamation of Barclays Bank (Canada) with the Imperial Ba of Canada in 1956 and the amalgamation of the Canadian Bank of Commerce and t Imperial Bank of Canada as the Canadian Imperial Bank of Commerce on June 1, 19 reduced this number to eight. The Bank of British Columbia was granted a chart by Parliament in December 1966 and commenced operations in July 1968, increasing t number of chartered banks to nine. The number of branches of chartered banks in ea province periodically from 1920 to 1969 is given in Table 8.

8.—Branches of Chartered Banks, by Province, as at Dec. 31 for Certain Years 1920-69

NOTE.—Figures include sub-agencies in Canada receiving deposits for the banks employing them; there were such sub-agencies at Dec. 31, 1969.

Province or Territory	1920	1926	1930	1940	1950	1960	1962	1963	1964	1965	1966	1967	1968	19
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	N
Newfoundland	—	—	—	—	39	71	81	88	90	104	107	106	111	1
Prince Edward Island	41	28	28	25	23	27	27	26	26	29	29	29	29	
Nova Scotia	169	134	138	134	144	173	178	180	183	189	189	192	195	1
New Brunswick	121	101	102	97	100	113	118	121	123	126	132	133	133	1
Quebec	1,150	1,072	1,183	1,083	1,164	1,427	1,489	1,515	1,539	1,580	1,604	1,604	1,574	1,5
Ontario	1,586	1,326	1,409	1,208	1,257	1,785	1,916	1,967	2,022	2,055	2,078	2,107	2,159	2,2
Manitoba	349	224	239	162	165	234	248	255	261	271	279	285	292	3
Saskatchewan	591	427	447	233	238	296	299	303	308	317	321	327	338	3
Alberta	424	269	304	172	246	394	417	431	445	457	462	472	485	5
British Columbia	242	186	229	192	294	514	545	546	563	580	588	606	622	6
Yukon and North-west Territories	3	3	4	5	9	17	14	15	15	16	17	18	18	
Canada	**4,676**	**3,770**	**4,083**	**3,311**	**3,679**	**5,051**	**5,332**	**5,447**	**5,575**	**5,724**	**5,806**	**5,879**	**5,956**	**6,0**

9.—Branches of Individual Canadian Chartered Banks, by Province, as at Dec. 31, 1969

NOTE.—This table includes 620 sub-agencies in Canada for receiving deposits.

Bank	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.
	No.	No.	No.	No.	No.	No.
Bank of Montreal	32	3	29	24	204	373
The Bank of Nova Scotia	46	9	57	41	73	319
Banque Canadienne Nationale	—	—	—	—	538	17
Banque Provinciale du Canada	—	2	—	18	272	22
Canadian Imperial Bank of Commerce	13	8	26	20	184	648
The Mercantile Bank of Canada	—	—	2	—	3	1
The Royal Bank of Canada	20	6	81	25	184	414
The Toronto-Dominion Bank	1	1	4	5	77	421
Bank of British Columbia	—	—	—	—	—	—
Totals	**112**	**29**	**199**	**133**	**1,535**	**2,215**

Bank	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Total
	No.	No.	No.	No.	No.	No.
Bank of Montreal	67	64	103	136	4	1,039
The Bank of Nova Scotia	27	38	75	83	1	769
Banque Canadienne Nationale	5	—	—	—	—	560
Banque Provinciale du Canada	—	—	—	—	—	314
Canadian Imperial Bank of Commerce	72	102	155	207	9	1,444
The Mercantile Bank of Canada	1	—	1	1	—	9
The Royal Bank of Canada	84	97	104	133	3	1,151
The Toronto-Dominion Bank	44	40	68	81	2	744
Bank of British Columbia	—	—	—	8	—	8
Totals	**300**	**341**	**506**	**649**	**19**	**6,038**

—Branches of Individual Canadian Chartered Banks Outside Canada, as at Dec. 31, 1969

NOTE.—This table does not include sub-agencies operating outside Canada, of which there were 48 in 1969.

Bank and Location	Number	Bank and Location	Number	Bank and Location	Number
nk of Montreal	**11**	**Canadian Imperial Bank of Commerce**	**38**	**The Royal Bank of Canada**—concl.	
Britain	2	Britain	2	Britain	2
United States	4	United States	13	Guyana	6
Germany	5	Antigua	1	Haiti	1
e Bank of Nova Scotia	**58**	Bahamas	3	Jamaica	11
Antigua	1	Barbados	1	Peru	1
Bahamas	7	Cayman Islands	1	Puerto Rico	6
Grenada	1	Grenada	1	Trinidad	11
Trinidad	12	Jamaica	9	Tobago	1
Barbados	3	St. Vincent	1	United States	1
Dominican Republic	5	Trinidad	5	Venezuela	6
England	3	St. Lucia	1	West Indies	11
Scotland	2				
St. Lucia	2			**The Toronto-Dominion Bank**	**3**
Puerto Rico	4	**The Royal Bank of Canada**	**92**	Britain	2
U.S. Virgin Islands	5	Argentina	3	United States	1
United States	2	Bahamas	8		
Lebanon	1	British Honduras	3	**Banque Canadienne Nationale**	**1**
Netherlands	1	Cayman Islands	1	France	1
Ireland	2	Colombia	5		
British Virgin Islands	1	Dominican Republic	12		
Belgium	1	France	1		
British Honduras	1	French West Indies	2	**Total**	**203**
Cayman Islands	1				
Guyana	1				
Greece	2				

Financial Statistics of Chartered Banks.—Chartered bank financial statistics recent years are given in Tables **11-15**; month-end data are available in the *Bank of nada Statistical Summary*.

11.—Statement of Chartered Bank Assets and Liabilities, as at Dec. 31, 1967-69

Assets and Liabilities	1967	1968	1969
	$'000	$'000	$'000
ets—			
old coin and bullion	24,251	120,984	67,082
ther coin in Canada	26,241	36,117	46,894
ther coin outside Canada	1,101	1,135	1,673
lotes of and deposits with Bank of Canada	1,546,584	1,683,250	1,652,267
overnment and bank notes other than Canadian	59,076	70,330	71,323
eposits with banks in Canadian currency	14,067	35,968	147,706
eposits with banks in currencies other than Canadian	2,326,318	3,263,205	6,380,524
heques and other items in transit (net)	1,018,925	1,411,206	1,112,549
overnment of Canada treasury bills, at amortized value	1,725,128	2,123,784	2,086,803
ther Government of Canada direct and guaranteed securities maturing within three years, at amortized value	1,399,481	1,680,262	1,326,642
overnment of Canada direct and guaranteed securities maturing after three years, at amortized value	1,504,573	1,760,987	1,654,099
anadian provincial government direct and guaranteed securities, at amortized value	342,516	373,495	363,642
anadian municipal and school corporation securities, not exceeding market value	347,557	366,440	368,403
ther Canadian securities, not exceeding market value	605,498	712,277	717,630
ecurities other than Canadian, not exceeding market value	692,909	726,959	783,461
ortgages and hypothecs insured under the National Housing Act 1954	748,529	830,990	998,874
ay-to-day, call and short loans to investment dealers and brokers in Canadian currency, secured	640,659	708,074	499,989
ay-to-day, call and short loans to investment dealers and brokers in currencies other than Canadian, secured	743,757	710,640	674,527
oans to Canadian provincial governments in Canadian currency	204,561	143,569	124,433

11.—Statement of Chartered Bank Assets and Liabilities, as at Dec. 31, 1967-69—concluded

Assets and Liabilities	1967	1968	1969
	$'000	$'000	$'000
Assets—concluded			
Loans to Canadian municipalities and school corporations in Canadian currency, less provision for estimated loss	603,180	692,245	795,
Other current loans in Canadian currency, less provision for estimated loss	13,115,695	14,921,728	17,006,
Other current loans in currencies other than Canadian, less provision for estimated loss	2,655,115	2,937,692	3,844,
Bank premises at cost, less amounts written off	331,633	353,959	378,
Shares of and loans to corporations controlled by the bank	111,643	127,850	170,
Customers' liability under acceptances, guarantees and letters of credit, as *per contra*	818,830	866,401	1,263,
Other assets	40,785	39,270	41,
Totals, Assets	**31,648,612**	**36,698,817**	**42,578,**
Liabilities—			
Deposits by Government of Canada in Canadian currency	617,768	669,227	1,307,
Deposits by Canadian provincial governments in Canadian currency	309,486	391,023	209,
Deposits by other banks in Canadian currency	235,115	260,408	359,
Deposits by other banks in currencies other than Canadian	1,528,584	2,134,287	3,239,
Personal savings deposits payable after notice, in Canada, in Canadian currency	11,759,630	13,621,848	15,029,
Other deposits payable after notice, in Canadian currency	3,255,088	4,049,649	3,392,
Other deposits payable on demand, in Canadian currency	6,485,767	7,387,325	7,036,
Other deposits in currencies other than Canadian	4,780,231	5,243,429	8,390,
Advances from Bank of Canada	3,000	5,000	
Acceptances, guarantees and letters of credit	818,830	866,401	1,263,
Other liabilities	81,416	106,303	210,
Accumulated appropriations for losses	424,058	561,610	594,
Debentures issued and outstanding	40,000	40,000	40,
Capital paid up	287,958	293,064	303,
Rest account	1,009,900	1,062,050	1,189,
Undivided profits at latest fiscal year-end	11,781	7,193	9,
Totals, Liabilities	**31,648,612**	**36,698,817**	**42,578,**

12.—Canadian Cash Reserves, 1960-69

NOTE.—Bank of Canada deposits are averages of the juridical days in the month shown; Bank of Canada no and Canadian dollar deposits are averages of the four consecutive Wednesdays ending with the second last Wednesd in the previous month. Until June 1967 the required cash reserve ratio was 8 p.c. on both demand and notice dep its. For the next eight months the required minimum monthly average on demand deposits was increased by ½ 1 p.c. per month and that on notice deposits was decreased by ½ of 1 p.c. Since February 1968 the required rat have been 12 p.c. for demand deposits and 4 p.c. for notice deposits as prescribed under the Bank Act.

(Millions of dollars)

Year	Cash Reserves			Canadian Dollar Deposit Liabilities	Average Cash Reserve Ratio
	Bank of Canada Deposits	Bank of Canada Notes	Total		
1960	625	360	985	12,052	8.2
1961	673	367	1,040	12,804	8.1
1962	748	376	1,124	13,812	8.1
1963	775	394	1,169	14,400	8.1
1964	857	407	1,263	15,598	8.1
1965	965	427	1,392	17,186	8.1
1966	1,057	449	1,506	18,607	8.1
1967	1,110	487	1,597	20,668	7.7
1968	965	525	1,490	23,314	6.4
1969	1,090	560	1,650	25,916	6.4

—Classification of Chartered Bank Deposit Liabilities Payable to the Public in Canada in Canadian Currency, as at Apr. 30, 1969 and 1970

Deposit Accounts of the Public of—	1969			1970		
	Personal Savings Deposit Accounts	Other Deposit Accounts of the Public	Total Deposit Accounts of the Public	Personal Savings Deposit Accounts	Other Deposit Accounts of the Public	Total Deposit Accounts of the Public
	No.	No.	No.	No.	No.	No.
s than $100	7,246,823	1,974,866	9,221,689	7,235,877	2,302,996	9,538,873
) or over but less than $1,000	4,603,567	1,751,437	6,355,004	4,784,460	2,006,331	6,790,791
00 or over but less than $10,000	2,891,727	628,186	3,519,913	3,109,897	658,672	3,768,569
000 or over but less than $100,000	222,260	126,592	348,852	254,521	123,212	377,733
),000 or over	2,669	15,620	18,289	3,004	14,924	17,928
Totals, Deposits	**14,967,046**	**4,496,701**	**19,463,747**	**15,387,759**	**5,106,135**	**20,493,894**

—Classification of Chartered Bank Loans in Canadian Currency, as at Dec. 31, 1967-69

Class of Loan	1967	1968	1969
	$'000,000	$'000,000	$'000,000
neral Loans—			
ersonal	3,589.7	4,327.8	4,780.8
To individuals, fully secured by marketable bonds and stocks	536.3	595.1	573.2
Home improvement loans	76.6	67.8	60.3
To individuals, not elsewhere classified	2,976.7	3,665.0	4,147.3
armers—			
Farm Improvement Loans Act	432.6	313.8	321.1
Other farm loans	589.6	716.2	813.7
dustry	2,995.2	3,067.1	3,631.5
Chemical and rubber products	171.2	217.3	243.1
Electrical apparatus and supplies	258.5	259.8	328.7
Foods, beverages and tobacco	503.9	507.6	537.3
Forest products	346.2	303.2	432.9
Furniture	48.8	55.4	61.2
Iron and steel products	391.1	406.9	450.8
Mining and mine products	263.4	239.1	324.3
Petroleum and products	265.5	338.3	324.4
Textiles, leather and clothing	267.1	273.2	335.5
Transportation equipment	292.7	249.1	314.3
Other products	186.6	217.3	279.1
erchandisers	1,288.4	1,443.7	1,513.7
onstruction contractors	461.6	513.9	565.7
ublic utilities, transportation and communications	471.1	590.2	675.6
ther business	1,702.2	1,952.4	2,245.0
eligious, educational, health and welfare institutions	301.2	293.1	303.0
Totals, General Loans	**11,831.6**	**13,218.2**	**14,850.1**
ıer Loans—			
ovincial governments	204.6	143.6	124.4
unicipal governments and school districts	603.2	692.2	795.4
ockbrokers	103.2	171.8	89.7
vestment dealers	231.7	343.2	227.2
ans to finance the purchase of Canada Savings Bonds	222.3	231.3	238.4
rain dealers and exporters	539.3	832.5	1,096.5
stalment and other financial companies	431.8	427.8	496.5
Totals, Other Loans	**2,336.0**	**2,842.4**	**3,068.1**
Grand Totals, Loans in Canadian Currency	**14,167.5**	**16,060.6**	**17,918.2**

15.—Chartered Bank Revenues, Expenses, Shareholders' Equity and Accumulated Appropriations for Losses, as at Oct. 31, 1967-69

NOTE.—All banks end their financial years on Oct. 31.

Item	1967	1968	1969
	$'000,000	$'000,000	$'000,00
FOR FINANCIAL YEAR ENDED OCT. 31			
Revenues—			
Income from loans	1,172.6	1,541.1	2,18
Income from securities[1]	305.9	396.4	45
Other operating income	237.1	271.7	31
Totals, Revenues	**1,715.7**	**2,209.2**	**2,94**
Expenses—			
Interest on depsosits and bank debentures	741.9	1,031.7	1,54
Salaries, premiums, contributions and other staff benefits	426.1	486.8	56
Property expenses, including depreciation	116.6	131.8	15
Other operating expenses[2]	155.5	177.9	20
Totals, Expenses[3]	**1,440.0**	**1,828.2**	**2,45**
Balance of Revenue[3]	275.7	381.0	48
Less:			
Loss experience not included in other operating expenses	−3.3	−10.1	2
Appropriations for losses, net[4]	50.9	137.6	3
Income taxes	111.3	129.3	24
Special contributions to pension funds	—	—	1
Leaving for dividends and shareholders' equity	116.8	124.2	16
Dividends	75.1	84.0	9
Total additions to shareholders' equity	44.2	52.7	11
From above operations	*41.7*	*40.2*	*7*
From issue of new shares including premiums	*2.5*	*12.5*	*4*
AS AT END OF FINANCIAL YEAR			
Shareholders' Equity			
Undivided profits	11.8	7.2	8
Rest account	1,009.9	1,062.1	1,16
Capital paid up	288.0	293.1	30
Totals, Shareholders' Equity	**1,309.6**	**1,362.3**	**1,47**
Accumulated Appropriations for Losses	**424.1**	**561.6**	**59**

[1] Excluding realized profits and losses on securities held in investment account which are included in the i "Loss experience not included in other operating expenses". [2] Includes provision for losses based on five-y average loss experience which in 1969 amounted to $29,600,000 or 0.136 p.c. of related loans, and also includes t other than income taxes. [3] Before provision for income taxes and appropriations for losses other than t included in "Other operating expenses". [4] General and tax-paid appropriations for losses: net after any trans out of accumulated appropriations for losses to undivided profits or rest account.

Cheque Payments.—Historical data on a monthly basis are available from 1924 the amount of cheques charged to customer accounts in 35 major clearing house centr The value of payments rose steadily throughout the country from 1924 to 1929. Fr 1929 to 1932 the value declined sharply and thereafter fluctuated within rather narr limits until the outbreak of the Second World War. Since 1939 the total value of chequ cashed in these centres has increased steadily. The value of cheques cashed in 35 cleari centres during 1969 reached a high of $714,993,156,000, an increase of 15.6 p.c. above t value of $618,313,206,000 for 1968. All five economic regions showed an increase, w British Columbia recording a gain of 21.9 p.c., Ontario 21.5 p.c., the Atlantic Provin 21.0 p.c., the Prairie Provinces 9.5 p.c. and Quebec 7.4 p.c. Payments in the two leadi centres also reached all-time highs, Toronto advancing 23.1 p.c. and Montreal 7.6 p.c. o the previous year.

16.—Cheques Cashed at 35 Clearing-House Centres, 1968 and 1969

Clearing-House Centre	1968	1969	Clearing-House Centre	1968	1969
	$'000	$'000		$'000	$'000
antic Provinces	**14,439,823**	**17,472,452**	**Ontario**—concluded		
alifax	6,637,572	8,180,766	Sudbury	1,477,068	1,698,729
oncton	1,453,887	1,655,550	Thunder Bay	748,861	887,569
aint John	2,135,591	2,354,765	Toronto	230,701,009	284,035,312
t. John's	4,212,773	5,281,371	Windsor	6,235,946	7,120,960
ebec	**189,967,485**	**194,298,992**	**Prairie Provinces**	**90,157,013**	**98,711,585**
ontreal	163,784,505	176,195,327	Brandon	537,494	531,444
uebec	15,671,370	16,415,280	Calgary	22,356,723	25,470,161
herbrooke	1,511,610	1,688,385	Edmonton	18,021,245	20,419,917
			Lethbridge	1,088,964	1,213,452
tario	**286,109,924**	**347,670,054**	Medicine Hat	440,580	487,684
rantford	1,453,105	1,569,803	Moose Jaw	431,455	443,314
hatham	1,307,569	1,403,253	Prince Albert	451,454	488,525
ornwall	883,854	1,064,134	Regina	10,114,316	10,469,343
amilton	12,293,037	14,877,229	Saskatoon	3,068,410	3,283,315
ingston	1,253,610	1,448,269	Winnipeg	33,646,372	35,904,430
itchener	3,279,098	4,107,962			
ondon	8,488,986	9,540,367	**British Columbia**	**46,638,961**	**56,840,073**
ttawa	13,090,133	14,705,592	Vancouver[1]	40,316,936	49,414,299
eterborough	1,209,206	1,230,405	Victoria	6,322,025	7,425,774
t. Catharines	2,261,310	2,421,445			
arnia	1,427,132	1,559,025	**Totals**	**618,313,206**	**714,993,156**

[1] Includes New Westminster.

Subsection 4.—Other Banking Institutions

In addition to the savings departments of the chartered banks and of trust and loan mpanies, there are provincial government savings banking institutions in Ontario and berta, as well as two important savings banks in the Province of Quebec—the Montreal y and District Savings Bank and La Banque d'Économie de Québec—established under eral legislation and reporting monthly to the Department of Finance. Co-operative dit unions also encourage savings among low-income classes and extend small loans to ir members.

Province of Ontario Savings Office.—The establishment of the Province of Ontario ings Office was authorized by the Ontario Legislature at the 1921 Session and the first nches were opened in March 1922. Interest at the rate of 6 p.c. per annum (as of Nov. 1, 0), compounded half-yearly, is paid on accounts and deposits are repayable on demand. al deposits as of Mar. 31, 1970 were $109,000,000 and the number of depositors was proximately 68,000; 21 branches are in operation throughout the province.

Province of Alberta Treasury Branches.—Savings deposits are accepted at 70 asury Branches throughout the province and the total of such deposits at Mar. 31, 1970 s $152,071,924. Of that amount, $43,769,964 was payable on demand, on which cash ers can be drawn and on which interest is paid at the rate of 4 p.c. per annum; $24,669,810 s in Super Savings, bearing interest at the rate of 6 p.c. per annum; and $83,632,150 was Term Deposits, for terms ranging from 30 days to five years and bearing interest at rates nparable with those paid on the open market.

Province of Quebec Savings Banks.—The Montreal City and District Savings Bank, nded in 1846 and operating under a federal charter since 1871, had, at Oct. 31, 1970, aid-up capital and reserve of $20,500,000, savings deposits of $527,979,571, and total bilities of $559,574,169. Assets of a like amount included $159,846,003 of federal, vincial, municipal and other securities.

La Banque d'Économie de Québec, founded in 1848 (as La Caisse d'Économie de tre-Dame de Québec) under the auspices of the St. Vincent de Paul Society, incorporated Act of the Canadian Legislature in 1855 and given a federal charter by SC 1871, c. 7, ame part of the Provincial Bank of Canada on Aug. 3, 1970. At the time of the merger,

savings deposits amounted to $60,920,791, paid-up capital and reserve combined total $3,500,000 and assets and liabilities each amounted to $67,593,212.

Credit Unions.—The first credit union in Canada was founded in Lévis, Que., 1900, its purposes being to promote thrift by encouraging saving and to provide loans members who could not get credit elsewhere or could get it only at high interest rat For many years growth was slow; in 1911, when the first figures were available, ass amounted to $2,000,000 and by 1940 they were only $20,000,000. However, since t time there has been a spectacular increase. Assets of the Quebec credit unions amoun to over $1,000,000,000 at the end of 1964 and to over $2,200,000,000 at the end of 19 In other provinces, credit unions have not attained the same importance as they have Quebec; the first credit union legislation was passed in Nova Scotia in 1932 followed legislation in Manitoba and Saskatchewan in 1937 and in Ontario and British Colum in 1938.

Credit unions are under provincial legislation. Almost all local offices in each provi belong to central credit unions operating within the province either directly or throu regional unions. There is a considerable difference between Quebec and the other provin in the asset-holding of credit unions; Quebec unions have a large proportion of their inve ments in the form of mortgages and government bonds while unions in the other provin have a greater percentage in loans. Credit unions probably play their most important r in smaller communities where they may function to a large extent as local banks. T number of chartered credit unions in Canada at the end of 1969 was 4,769, of which 4,4 reported a total membership of 5,003,000 and assets of $4,064,065,000. Quebec, w 2,756,887 members and assets of $2,202,680,000, accounted for 55 p.c. of both total memb ship and total assets of all credit unions in Canada. Credit unions classified by bond association on a percentage basis were: occupational 28, residential 59 and associational

Canadian credit unions in the 1960-69 decade have continued the steady growth g erally in evidence since credit unions were first organized in Quebec in the early part of t present century. Loans granted by credit unions increased by 3 p.c. in 1969 to rea $1,525,655,000, being a 217-p.c. increase over the corresponding figure of $481,192,000 1960. Assets at $4,064,065,000 increased by 209 p.c. and savings at $3,657,500,000 creased by 206 p.c. in the same comparison. Membership of 5,003,000 represented 24 p of the total population, compared with 2,544,000 and 14 p.c., respectively, in 1960.

There were 20 central credit unions in 1969; these unions act as credit unions for t credit unions, mainly by accepting deposits of surplus funds from them and providing source of funds for them to borrow when they cannot meet the demand for local loa Most of the centrals also admit co-operatives as members. Total assets of the centr increased by 8 p.c. to $562,399,000 and loans to members increased 19 p.c. to $437,000,0 over the previous year. The Canadian Co-operative Credit Society serves as a cent credit union for the provincial centrals and large co-operatives all across Canada.

17.—Credit Unions in Canada, 1960-69

Year	Credit Unions Chartered	Credit Unions Reporting	Members[1]	Assets[1]	Loans Granted to Member
	No.	No.	No.	$'000	$'000
1960	4,608	4,345	2,553,951	1,314,290	481,19
1961	4,682	4,348	2,740,251	1,506,167	578,66
1962	4,760	4,323	2,879,179	1,673,835	676,31
1963	4,809	4,336	3,123,735	1,920,341	771,70
1964	4,870	4,362	3,418,033	2,212,690	918,60
1965	4,939	4,364	3,677,291	2,541,791	1,078,13
1966[2]	4,934	4,415	3,859,677	2,926,134	1,226,54
1967	4,911	4,404	4,280,908	3,367,732	1,323,07
1968	4,861	4,373	4,632,382	3,699,840	1,482,00
1969	4,769	4,485	5,002,722	4,064,065	1,525,65

[1] Reporting organizations only. [2] Northwest Territories included from 1966.

18.—Summary Statistics of Credit Unions, by Province, 1969

rovince or Territory	Credit Unions Chartered	Credit Unions Reporting	Members	Assets	Shares	Deposits	Loans Granted to Members
	No.	No.	No.	$'000	$'000	$'000	$'000
wfoundland	64	20	5,213	1,674	1,257	118	1,267
nce Edward Island	22	22	10,741	4,236	2,888	546	2,272
va Scotia	154	151	97,975	43,568	30,786	6,293	33,902
w Brunswick	161	160	108,775	41,179	34,030	1,813	17,509
ebec	1,732	1,644	2,756,887	2,202,680	259,196	1,795,587	591,361
tario	1,618	1,484	977,206	771,119	478,877	204,885	404,098
nitoba	234	234	183,987	168,721	106,784	35,566	98,930
katchewan	278	276	310,915	394,807	203,277	137,476	148,169
erta	263	257	147,351	118,415	64,894	35,808	63,223
tish Columbia	241	235	403,446	317,621	145,664	111,723	164,917
rthwest Territories	2	2	226	45	41	—	..
Totals	**4,769**	**4,485**	**5,002,722**	**4,064,065**	**1,327,694**	**2,329,815**	**1,525,655**

19.—Assets, Liabilities and Members' Equity of Local Credit Unions in Canada, 1967-69

(Millions of dollars)

Item	1967	1968	1969	Item	1967	1968	1969
Assets				**Assets—concluded**			
h and Demand Deposits—				Other assets	22	26	37
n hand	49	64	58				
n banks	30	28	34	**Totals, Assets**	**3,382**	**3,700**	**4,064**
n centrals	269	293	328				
ther	11	25	11	**Liabilities**			
estments—							
erm deposits	99	95	142	Accounts Payable—			
overnment of Canada	48	36	40	Interest	2	2	5
rovincial governments	78	81	103	Dividends	—	2	3
unicipal governments	281	283	299	Other	5	4	5
hares in centrals	48	60	50				
eligious institutions	28	33	25	Loans Payable—			
ospitals	16	17	14	Centrals	93	112	109
ther	60	60	55	Banks	10	11	15
ns—				Other	4	6	11
ash loans—							
Personal	1,092	1,207	1,359	Deposits—			
Farm	82	86	93	Ordinary	1,592	1,716	1,905
Co-operatives and other enterprises	28	27	28	Term	194	265	424
Other	58	53	52	Other liabilities	2	7	4
ortgage loans—							
Dwellings	862	963	1,052	**Members' Equity**			
Farm	68	86	87				
Co-operative and other enterprises	26	34	45	Share capital	1,252	1,346	1,328
Other	19	25	27	Reserves	142	162	185
				Undivided earnings	86	67	70
d Assets—							
nd and buildings	85	91	98	**Totals, Liabilities and Members' Equity**	**3,382**	**3,700**	**4,064**
quipment and furniture	22	27	27				

Section 2.—Other Commercial Finance

Subsection 1.—Trust and Mortgage Loan Companies

Trust and mortgage loan companies are registered with either the federal or provincial ernments. They operate under the Loan and Trust Companies Acts (RSC 1952, c. 170 amended in 1953, 1958, 1961 and 1964-65, and RSC 1952, c. 272 as amended in 1953, 8, 1961 and 1964-65, respectively) or under corresponding provincial legislation.

The first mortgage loan companies were established in Ontario in the 1840s as c operative associations to provide mortgage finance for their members. These associatio evolved under legislation which was amended to give them permanent corporate status mortgage-lending institutions. They obtained their funds principally by selling mediu and long-term debentures to the public but also had the power to open deposit accoun Trust companies were first incorporated in Ontario in the 1880s. Although the tru company legislation prevented them from borrowing funds, they had the power to acce funds in guaranteed trust accounts and invest them in specified types of assets. Th feature of trust company legislation is now general throughout Canada. The trust co panies operate as financial intermediaries in the same way as mortgage loan compani chartered banks or savings and other financial institutions and are the only corporatio in Canada with power to act as trustees for property interests and to conduct other fiducia business. In this capacity they act as executors, trustees and administrators under wi or by appointment, as trustees under marriage or other settlements, as agents in the manag ment of estates of the living, as guardians of minor or incapable persons, as financial age for municipalities and companies, as transfer agents and registrars for stock and bond issu as trustees for bond issues and, where so appointed, as authorized trustees in bankruptci

Trust and mortgage loan companies were established and grew rapidly under provinci legislation in the late nineteenth and early twentieth centuries. Some companies we chartered by special Acts of Parliament but it was not until 1914 that federal legislation w passed and the Federal Government began to regulate trust and loan companies register under its Acts. In 1967 there were nine federal trust companies and 12 federal loan comp nies. The Superintendent of Insurance examines these companies and also, by arrangeme with the provinces, trust and loan companies incorporated in Nova Scotia and trust co panies incorporated in New Brunswick and Manitoba. Companies must be licensed l each province in which they wish to operate.

Although there are many differences among the various federal and provincial Ac the broad lines of the legislation are common. In their intermediary business the compani have the powers mentioned above to borrow or, in the case of trust companies, accept fun in guaranteed accounts subject to maximum permitted ratios of these funds to shareholde equity. The funds may be invested in specified assets which include first mortgages real property, government securities and the bonds and equity of corporations havi established earnings records, and the companies may grant loans on the security of su bonds and stocks. Trust and loan companies are not required to hold specified cash r serves, as are the chartered and savings banks, but there are broadly defined "liquid asse requirements in a number of the Acts.

The trust and mortgage loan companies have been substantial members of the Canadi financial system since their early years. In the 1920s they held about one half of the priva mortgage business in Canada but their growth rate fell off sharply because of the impa of the depression of the 1930s and World War II on the mortgage business. In the yea since the War the re-emergence of strong demands for mortgage financing and the willin ness of many trust and loan companies to compete aggressively for funds have led to su tained rapid expansion.

According to DBS figures, mortgage loan companies had assets before investment subsidiaries of $3,007,136,000 at the end of 1969 compared with $2,762,364,000 a year earli Their holdings of mortgages amounted to $2,507,943,000, or 83 p.c. of total assets. T finance their investments, these companies had borrowed $2,141,384,000 or 71 p.c. of th total funds by the sale of debentures and $440,571,000 from demand deposits.

At the end of 1969, company and guaranteed funds of trust companies in the DB survey were $5,770,682,000 compared with $4,971,582,000 a year earlier, an increase 16 p.c. Trust companies, while not specializing in mortgage financing to the same exte as loan companies, in recent years have been putting a high proportion of their funds in these investments with the result that mortgages were 57 p.c. of their assets at the end 1969 compared with 48 p.c. six years earlier. The trust companies had $3,849,754,0

rm deposits outstanding and $1,338,975,000 demand deposits in December 1969, account-g for 90 p.c. of total funds. About one third of the demand or savings deposits were chequable accounts. There is considerable variety among the trust companies and a w have developed a substantial short-term business, raising funds by issuing certificates r terms as short as 30 days and also operating as lenders in the money market. Neverthe-ss, it remains true that the main business of the trust companies in their intermediary le is to channel savings into mortgages and other long-term investments. In addition, ust companies, as of Dec. 31, 1968, had $18,796,962,000 under administration in estate, ust and agency accounts.

More complete and up-to-date financial information may be found in quarterly balance eet statements published by the DBS and the Bank of Canada, the reports of the Super-tendent of Insurance on Loan and Trust Companies and the reports of provincial super-sory authorities.

20.—Assets, Liabilities and Shareholders' Equity of Trust Companies (Company and Guaranteed Funds), 1965-69

(Millions of dollars)

Item	1965	1966	1967	1968	1969
Assets					
mand deposits, incl. cash and foreign currency	98	88	93	119	231
estments—					
nvestments in Canadian Securities—					
Federal	387	438	455	517	594
Provincial	195	229	285	285	286
Municipal	126	127	111	120	95
Sales finance and commercial paper	208	195	149	229	296
Term deposits with chartered banks	..	72	170	190	93
Term deposits with trust and mortgage companies	..	18	14	28	12
Corporation bonds and debentures	219	240	291	320	329
Collateral loans	108	120	115	142	163
fortgages—					
Loans under NHA	1,975	493	506	546	594
Conventional mortgage loans		1,677	1,908	2,176	2,670
nvestments in Canadian preferred and common shares	75	83	85	97	107
nvestments in foreign securities	5	14	23	22	63
nvestments in subsidiary and affiliated companies	19	30	32	56	82
erest, rents and other receivables[1]	..	24	38	42	55
al estate and equipment	46	46	52	53	66
her assets	27	29	26	30	35
Totals, Assets[1]	**3,488**	**3,923**	**4,352**	**4,972**	**5,771**
Liabilities					
mand and Savings Deposits—					
hequing	551	557	572	575	438
on-chequing	564	539	591	650	901
m Deposits—					
nder one year	2,006	612	623	798	1,058
ne to six years		1,785	2,085	2,380	2,772
ver six years		30	32	30	20
k loans	4	6	7	5	3
rt-term loans and notes payable	37	15	19	20	20
ts owing parent and affiliated companies	11	8	10	38	41
erest, dividends, taxes and other payables[1]		36	62	87	101
Shareholders' Equity					
ital paid up	101	114	119	115	122
stment reserves	214	68	76	85	90
erve fund		141	148	177	192
accruals, payables and retained earnings[1]		—	—	—	—
ained earnings		12	9	12	12
Totals, Liabilities and Shareholders' Equity[1]	**3,488**	**3,923**	**4,353**	**4,972**	**5,771**

[1] Prior to 1966, total assets exclude dividends, accrued interest and other receivables; these receivables are ed against the combined liability items, interest, dividends and other payables, and retained earnings.

21.—Revenues and Expenses of Trust Companies, 1967-69

(Millions of dollars)

Item	1967	1968	1969
Revenues			
Interest earned	257	302	337
Dividends	4	5	6
Fees and commissions	81	92	114
Other revenue	10	8	17
Totals, Revenues	**352**	**407**	**474**
Expenses			
Interest	190	234	270
Depreciation	3	3	4
Amortization	1	1	1
Income taxes	15	16	18
Other expenses	119	128	152
Totals, Expenses	**328**	**382**	**445**
Net profit	24	25	29

22.—Assets, Liabilities and Shareholders' Equity of Mortgage Loan Companies, 1965-69

(Millions of dollars)

Item	1965	1966	1967	1968	1969
Assets					
Demand deposits, incl. cash and foreign currency	54	32	38	61	3
Investments—					
Investments in Canadian Securities—					
Federal	117	125	133	122	13
Provincial	39	44	49	47	5
Municipal	10	10	10	8	
Sales finance and commercial paper	2	1	11	12	
Term deposits with chartered banks	..	5	17	30	
Term deposits with trust and mortgage companies	..	5	5	5	
Corporation bonds and debentures	31	24	28	31	3
Collateral loans	20	22	21	25	2
Mortgages—					
Loans under NHA	1,839	128	130	152	21
Conventional mortgage loans		1,820	1,943	2,083	2,29
Investments in Canadian preferred and common shares	55	58	68	71	7
Investments in foreign securities	4	4	5	5	
Investments in subsidiary and affiliated companies	201[1]	195	208	214	28
Interest, rents and other receivables[2]	..	22	24	26	2
Real estate and equipment	51	59	61	60	5
Other assets	15	16	21	24	2
Totals, Assets[2]	**2,438**	**2,570**	**2,772**	**2,976**	**3,29**

For footnotes, see end of table.

2.—Assets, Liabilities and Shareholders' Equity of Mortgage Loan Companies, 1965-69 — concluded

Item	1965	1966	1967	1968	1969
Liabilities					
mand and Savings Deposits—					
hequing	162	165	152	157	162
lon-chequing	203	219	246	293	279
m Deposits—					
nder one year	1,372	27	43	44	46
ne to six years		834	959	1,092	1,295
ver six years		625	649	647	615
k loans	63	69	64	42	72
rt-term loans and notes payable	125	95	79	80	111
ots owing parent and affiliated companies	224[1]	176	179	180	181
erest, dividends, taxes, and other payables[2]		59	65	87	105
Shareholders' Equity					
ital paid up	123	123	133	136	216
estment reserves	166	30	37	42	42
erve fund		95	112	122	117
accruals, payables, and retained earnings[2]		—	—	—	—
ained earnings		53	54	54	51
Totals, Liabilities and Shareholders' Equity[2]	2,438	2,570	2,772	2,976	3,292

[1] The increase over the previous year is caused by changes in inter-company accounts of affiliated companies.
ior to 1966, total assets exclude dividends, accrued interest and other receivables; these receivables are netted
nst the combined liability items, interest, dividends and other payables and retained earnings.

23.—Revenues and Expenses of Mortgage Loan Companies, 1967-69

(Millions of dollars)

Item	1967	1968	1969
Revenues			
rest earned	173	189	216
idends	7	10	9
and commissions	1	1	1
er revenues	25	26	31
Totals, Revenues	**206**	**226**	**257**
Expenses			
rest	118	131	146
reciation	2	2	2
rtization	1	1	1
me taxes	13	16	19
er expenses	44	48	65
Totals, Expenses	**178**	**198**	**233**
profit	28	28	24

Subsection 2.—Licensed Small Loans Companies and Licensed Money-Lende

Small loans companies and money-lenders are subject to the Small Loans Act (R 1952, c. 251, as amended by SC 1956, c. 46). This Act, first passed in 1939, sets maxim charges on personal cash loans not in excess of $1,500 and is administered by the Dep ment of Insurance. Lenders not licensed under the Act may not charge more than 1 per month. Those wishing to make small loans at higher rates must be licensed each y by the Minister of Finance under the Small Loans Act. The Act allows maximum ra including charges of every kind, of 2 p.c. per month on unpaid balances not exceeding $3 1 p.c. per month on the portion of unpaid balances exceeding $300 but not exceeding $1, and one half of 1 p.c. on any remainder of the balance exceeding $1,000. Loans in exces $1,500 are not regulated and lenders operating entirely above this limit and the la loans of licensed lenders are thus exempt from the Act. Nor does the Act regulate char for the instalment financing of sales. Prior to Jan. 1, 1957, the Act applied only to lo of $500 or less and the maximum rate was 2 p.c. per month.

At the end of 1969, there were five small loans companies and 52 money-lenders licen under the Act. Small loans companies are incorporated by special Acts of the Parliamen Canada, the first of them commencing business in 1928; the money-lenders include p vincially incorporated companies and one partnership. Many of the small loans co panies and money-lenders are affiliated with other financial institutions, principally nadian sales finance companies and United States finance or loan companies, and th subsidiary companies account for a high proportion of the total business of licensed lend The affiliations with sales finance companies reflect the close relationship between ins ment financing and the consumer loan business. The Dominion Bureau of Statis publishes quarterly balance sheets for sales finance and consumer loan companies as a wh and does not attempt to distinguish the two groups within the industry.†

The subsidiary small loans companies and money-lenders obtain most of their fu through their parent companies. A few of the larger companies have supplemented th bank loans by selling short-term paper in the market but the amount has been small co pared with the short-term market borrowing of the sales finance companies. The sma independent companies rely mainly on their shareholders and on borrowing from chartered banks.

The annual figures of assets and liabilities given in Table 24 for 1966-69 are from Department of Insurance report.†

* Prepared by the Superintendent of Insurance for Canada.

† See *Financial Institutions* (Catalogue No. 61-006). More complete data on the business of licensed lenders given in the *Report of the Superintendent of Insurance for Canada* on *Small Loans Companies and Money-Lenders* for year ended Dec. 31, 1969 (Catalogue No. In 3-4/1969).

24.—Assets and Liabilities of Small Loans Companies and Money-Lenders, 1966-69

Assets and Liabilities	1966	1967	1968	1969
	$	$	$	$
Assets	**995,273,267**	**1,042,901,678**	**1,132,835,283**	**1,484,703,**
Small loans balances	647,887,126	635,822,357	619,217,645	595,658,
Balances, large loans and other contracts	311,984,099	372,603,457	470,874,565	847,609,
Cash	10,432,107	11,604,924	11,711,354	9,793,
Other	24,969,935	22,870,940	31,031,719	31,642,
Liabilities	**995,273,267**	**1,042,901,678**	**1,132,835,283**	**1,484,703,**
Borrowed money	799,454,035	823,137,246	883,773,537	1,122,404,
Reserves for losses	24,380,272	25,893,727	27,925,147	34,611,
Paid-up capital	50,687,274	50,795,964	47,757,361	46,920,
Surplus paid in by shareholders	7,702,743	8,702,743	6,929,393	14,085,
Earned surplus	46,246,460	54,631,858	73,354,582	93,483,
Other	66,802,483	79,740,140	93,095,263	173,198,

There was little change in 1969 compared with 1968 in the amount of small loans siness done by the combined companies. Small loans made to the public during the ar numbered 1,351,092 as against 1,455,816 in 1968, a drop of about 7.2 p.c.; the amount such loans decreased from $878,186,607 to $823,277,807, a drop of about 6.3 p.c. The erage small loan made was $609 in 1969 and $603 in 1968. At the end of the year, small ns outstanding numbered 1,155,108 for an amount of $595,658,632, or an average of 16 per loan; comparable figures for 1968 were 1,203,993, $619,217,638 and $514, respecely.

Gross profits of small loans companies and money-lenders before income taxes and ore taking into account any increase or decrease in reserves for bad debts increased from 5,580,033 in 1968 ($11,110,435 being the profit on small loans and $24,469,598 the profit business other than small loans) to $51,348,419 in 1969 ($8,427,200 being the profit on all loans and $42,921,219 the profit on other business).

In comparing balances of large loans and other contracts, and gross profits on business ier than small loans for the years 1968 and 1969, it should be noted that one lender acired the business of an associate company on Jan. 1, 1969, which contributed significantly the totals for these items in that year.

Subsection 3.—Foreign Exchange

The dollar, established officially as the currency of the united provinces of Canada Jan. 1, 1858, and extended to cover the New Dominion by the Uniform Currency Act 1870, was defined as 15/73 of the British gold sovereign.* That is, the par rate of hange between the dollar and the pound sterling was fixed at $4.866, making the Canan currency the equivalent of the United States dollar at parity. With minor variations ween the import and export gold points representing the cost of shipping gold in either ection, the value of the pound sterling in Canada remained at this level until the outak of World War I. The United States dollar, on the other hand, was at a discount in ms of Canadian funds for the first eleven years after Confederation since it was not eemable in gold from February 1862 to January 1879. On the basis of gold equivalents would appear that the greatest monthly average discount on the United States dollar er Confederation was approximately 31 p.c., reached in August 1868. From 1879 to 4 the dollars of the two countries remained at par, varying only within the gold points under $2 per thousand.

On the outbreak of World War I, Canada and Britain suspended the gold standard. r some weeks both the pound and the Canadian dollar rose to a premium in New York. bsequently both fell back with the pound going to a slight discount. In January 1916 pound was officially pegged at $4.76 in American funds. This level was maintained h the help of funds realized by sales of United States securities owned by residents of tain, by borrowing in the United States and, after the American entry into the War, by United States Government financing Allied purchases in that country.

From 1915 to the end of 1917, fluctuations in the rate of exchange between the Canadian l United States dollars did not exceed 2 p.c. on either side of parity; the pound was ble in terms of United States dollars during this period. In 1918 the Canadian dollar gan to weaken. After the pound was unpegged in 1919, the Canadian dollar declined ther and in 1920 it fell to 82 cents in New York with sterling going as low as $3.18.

By the latter half of 1922 the Canadian dollar had returned practically to par in w York. Despite some further weakness in sterling, the dollar remained close to that el during the next two years, averaging 98.04 and 98.73 cents in terms of the United tes dollar in 1923 and 1924, respectively, and fluctuating between a discount of about

* The gold sovereign remained the standard for the Canadian dollar until 1910 when the currency was defined erms of fine gold, making it the exact gold equivalent of the United States dollar. Both British and United es gold coins were, however, legal tender in Canada for this whole period.

3.6 cents and a premium of approximately 0.4 cents. After Britain resumed gold paym in April 1925, the range of fluctuation of the Canadian dollar narrowed further. F Canada's return to the gold standard in the period July 1, 1926 to January 1929, the change rate remained within the gold points. The Canadian dollar then went to a sl discount in New York. With the exception of the period July to November 1930, whe went to a small premium in New York, the dollar remained below parity until Bri abandoned the gold standard in September 1931. After that month the pound ster depreciated sharply and the Canadian dollar followed, reaching lows* in New York 80.5 cents in December 1931 and 82.6 cents in April 1933.

Following the prohibition of gold exports in the latter month by the United Sta the pound and the Canadian dollar strengthened rapidly in terms of American fu By November 1933 both currencies had reached a premium in New York. Meanwh in a series of steps beginning with permitting the export of newly mined gold in Aug 1933, the United States moved toward resumption of the gold standard. As of Feb 1934, the United States Treasury undertook to buy all gold offered at $35 per ou After that the exchange rate between the Canadian and United States dollars stabiliz Until the outbreak of war in 1939 much of the trading was conducted within one cent parity although the Canadian dollar in New York did go as high as 103.6 cents (Septem 1934) and as low as 98.0 cents (September 1938).*

On the outbreak of World War II in September 1939, Britain and other sterling co tries introduced foreign exchange control involving fixed buying and selling rates of $4.(and $4.03½, respectively, in terms of the United States dollar. The Canadian dollar New York declined until Sept. 16, 1939, when the Government instituted foreign excha control† in Canada and established fixed buying and selling rates of $1.10 to $1.11 for U.S. dollar and $4.43 to $4.47 for sterling. As compared with previous months, the preciation of the Canadian dollar in terms of United States funds was approximately h as great as that of the pound sterling.

Apart from a minor adjustment on Oct. 15, 1945, when selling rates for U.S. doll and sterling were lowered to $1.10½ and $4.45, respectively, the official rates for Canadian dollar remained unchanged until July 5, 1946. At that time the rate on U.S. dollar was restored to par, with buying and selling rates for that currency of $1.00 $1.00½ and for sterling $4.02 to $4.04. These rates continued in effect until Sept. 1949 when, following a 30.5-p.c. reduction by Britain in the value of sterling to $2.80 U (an action which was paralleled in varying degrees by numerous other currencies), Cana returned to the former official rates of $1.10 and $1.10½ for United States funds. Sterl was quoted at $3.07¼ and $3.08¾ on the basis of the New York cross rate.

On Sept. 30, 1950, the Minister of Finance announced that official fixed foreign change rates which had been in effect at varying levels since 1939 would be withdra effective Oct. 2, and that the rate would henceforth be determined in the market for forei exchange. This policy was carried out within the framework of exchange control ur Dec. 14, 1951, at which time the Foreign Exchange Control regulations were revoked the Governor in Council, terminating the period of exchange control that had prevail in Canada since 1939. The Foreign Exchange Control Act was repealed in 1952. May 2, 1962, the Minister of Finance announced that the Canadian dollar was bei stabilized at a fixed par value of 92½ cents in terms of United States currency. This acti was taken with the concurrence of the International Monetary Fund and, in accordar with the Articles of Agreement of that organization, the Government of Canada underto to maintain the Canadian exchange rate within a margin of 1 p.c. on either side of t established par value.

* Noon quotations. Daily highs and lows may have exceeded these rates.

† The operations of the Foreign Exchange Control Board from the time of its establishment to the terminat of exchange control in December 1951 are reviewed in the 1941 to 1952-53 editions of the Year Book.

On May 31, 1970, the Government of Canada announced a decision not to maintain he exchange rate of the Canadian dollar within the 1-p.c. parity band prescribed by the MF for the time being. The movements of the U.S. dollar in Canadian funds from nuary 1961 to December 1970 are shown in Table 25.

25.—Price of the United States Dollar in Canada, by Month, 1961-70

NOTE.—Rates published by Bank of Canada. Noon average market rate for business days in period.
(Canadian cents per U.S. dollar)

Month	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
nuary	99.29	104.50	107.71	108.02	107.38	107.46	107.95	108.47	107.27	107.28
bruary	98.96	104.88	107.76	108.00	107.58	107.63	108.06	108.73	107.44	107.31
arch	98.73	104.94	107.80	108.05	108.11	107.62	108.20	108.49	107.67	107.27
ril	98.89	104.98	107.68	108.09	107.92	107.70	108.24	108.01	107.62	107.28
ay	98.75	108.23	107.72	108.09	107.95	107.67	108.21	107.79	107.70	107.28
ne	100.55	108.79	107.82	108.09	108.23	107.65	108.04	107.68	107.95	103.84
ly	103.41	107.89	107.97	108.13	108.35	107.48	107.78	107.36	108.06	103.20
gust	103.15	107.76	108.29	107.87	107.84	107.51	107.58	107.26	107.81	102.14
ptember	103.08	107.68	107.98	107.61	107.64	107.62	107.53	107.30	107.82	101.59
tober	103.03	107.60	107.79	107.53	107.51	107.93	107.33	107.27	107.79	102.14
vember	103.57	107.68	107.76	107.39	107.49	108.20	107.51	107.30	107.58	102.00
ecember	104.27	107.60	107.93	107.46	107.58	108.31	108.02	107.31	107.42	101.74
Annual Average	**101.32**	**106.89**	**107.85**	**107.86**	**107.80**	**107.73**	**107.87**	**107.75**	**107.68**	**104.40**

26.—Canada's Official International Reserves and Exchange Fund Account Forward Commitments, 1961-69

(Millions of U.S. dollars)

End of—	Convertible Foreign Currencies[1]		Gold	Reserve Position in the IMF	Total	Exchange Fund Account Forward Contracts[3]	
	U.S. Dollars	Other[2]				With Bank of Canada[4]	With Others[5]
61	1,123.0	10.7	946.2	212.1	2,292.0	—	−10.0
62	1,842.8	9.2	708.5	—	2,560.5	—	—
63	1,786.6	9.5	817.2	—	2,613.3	—	54.0
64	1,654.5	11.8	1,025.7	197.5	2,889.5	50.0	10.0
65	1,519.9	12.8	1,150.8	353.4	3,036.9	−10.0	−4.4
66	1,195.4	12.4	1,045.6	448.5	2,701.9	165.0	−5.4
67	1,255.2	13.4	1,014.9	433.4	2,716.9	52.0	16.8
68	1,964.9	11.6	863.1	206.2	3,045.8	60.0	27.8
69	1,743.6	12.3	872.3	478.1	3,106.3	115.0	7.8

[1] Convertible foreign currency holdings of the Exchange Fund Account, the Receiver General for Canada and e Bank of Canada. [2] Valued at official parity rates in terms of U.S. dollars. [3] A positive figure icates a net commitment to take delivery of foreign exchange in the future and a negative figure indicates a com-tment to deliver foreign exchange in the future. [4] Insofar as forward transactions between the Exchange nd Account and the Bank of Canada are matched by spot transactions, they do not have any effect on total official dings of gold and U.S. dollars. [5] Includes overnight suspense transactions with the Bank of Canada and ers, as well as the net forward position with the market. The transactions of the Exchange Fund Account with e market are carried out by the Bank of Canada.

Subsection 4.—The Bond Market*

Sales of Canadian Bonds.—A net total of $3,774,000,000 was raised in the bo market by Canadian government and corporate borrowers in 1969. This amount w about $925,000,000 less than that raised in 1968, and was more than accounted for by t declines of $1,200,000,000 in net new issues of the Government of Canada, the major bo borrower historically.

As a result of rising consumer prices, fiscal and monetary policy became restricti and the rate of real growth of the economy slackened. The curtailment of expenditu growth relative to increases in revenue, improved the net position of the senior levels government substantially. The debt operations of the Government of Canada consist mostly of the refunding of maturing issues in the domestic market.

The $2,101,000,000 of net new issues of provincial governments included $805,000,0 purchased by the Canada Pension Plan Investment Fund and about $165,000,000 throu the Quebec Pension Plan. Part of the Canada Pension Plan proceeds were channelled local governments. In addition, local government securities amounting to $285,000,0 were sold to provinces and their financing agencies. This is not included in the total bonds outstanding shown in Table 27. Net new market issues of municipal governme bonds amounted to $278,000,000. Corporations resorted to bond financing to the exte of $969,000,000 in 1969, and institutions had net new issues in 1969 of $80,000,000.

Bond-yield averages increased considerably in 1969. Government of Canada secu ties for terms of ten years and over yielded 8.33 p.c. at the end of Dec. 31 compared to 7. p.c. a year earlier. Comparable figures for 10 provincials were 9.19 p.c. and 7.92 p.c., a for 10 municipals, 9.29 p.c. compared to 8.18 p.c.

There was an increase of $229,000,000 in finance and loan company paper, and $245,000,000 in other short-term paper in 1969. Yields on 90-day finance company pap increased to 9.17 p.c. at year-end compared to 6.65 p.c. a year earlier. Bank loans business increased during the year as did net issues of preferred and common stock, e pecially the latter which rose by 50 p.c.

Bonds Outstanding.—Total government and business bonds outstanding at t end of 1969 amounted to $64,974,000,000, an increase of 6 p.c. over 1968 and of 40 p. since 1964. In the 1964-69 period, the largest increase was one of 76 p.c. in the bond debt of provincial governments. This increase includes issues held in the Canada Pensi Plan Investment Fund and the Quebec Deposit and Investment Fund since the inceptio of the plans in 1966. Corporate bonds outstanding increased by 57 p.c. and municip government bonds by 30 p.c. between 1964 and 1969.

* A study of developments in Canadian bond markets dealing with behavioural aspects, 1962-69, was publish in DBS *Financial Flows Accounts*, System of National Accounts, Fourth Quarter, 1969 (Catalogue No. 13-002).

27.—Canadian Bonds Outstanding as at Dec. 31, 1964-69, and Annual Changes in Bonds an in Short-Term Paper Outstanding

NOTE.—Federal, provincial and municipal bonds include direct and guaranteed issues; institutional bonds exclu bonds payable in Canadian dollars of the International Bank for Reconstruction and Development and certain forei governments, amounting to $65,000,000, $84,000,000, $102,000,000, $119,000,000, $133,000,000 and $116,000,000 in t years 1964-69, respectively. SOURCE: *Bank of Canada Statistical Summary 1969 Supplement*, pp. 54, 97 and 103.

Item	1964	1965	1966	1967	1968	1969
	Bonds Outstanding Dec. 31					
	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000
Government of Canada	20,733	20,681	21,111	22,011	23,556	23,902
Provincial government	11,182	11,946	13,524	15,634	17,621	19,722
Municipal government	5,109	5,398	5,772	6,115	6,366	6,644
Corporate	9,068	10,413	11,458	12,402	13,259	14,228
Institutional	278	296	310	340	398	478
Totals	**46,370**	**48,734**	**52,185**	**56,501**	**61,200**	**64,974**

27.—Canadian Bonds Outstanding as at Dec. 31, 1964-69, and Annual Changes in Bonds and in Short-Term Paper Outstanding—concluded

Item	1964	1965	1966	1967	1968	1969
	Changes in Bonds Outstanding and in Short-Term Paper[1]					
	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000
onds—						
Government of Canada	457	−52	430	900	1,545	346
Treasury bills	*−100*	*10*	*20*	*285*	*370*	*70*
Marketable bonds	*55*	*−395*	*57*	*310*	*1,073*	*−165*
Non-marketable bonds	*502*	*333*	*353*	*305*	*102*	*441*
Provincial government	942	764	1,588	2,100	1,987	2,101
Municipal government	386	289	374	343	251	278
Corporate	836	1,345	1,045	944	857	969
Institutional	9	18	14	30	58	80
Totals, Bonds	2,630	2,364	3,451	4,317	4,698	3,774
ıort-Term Paper—						
Corporate—						
Finance and loan company paper	259	−162	93	−9	329	229
Other short-term paper	46	−117	49	109	130	245
Totals, Short-Term Paper	305	−279	142	100	459	474
Totals, Bonds and Short-Term Paper	**2,935**	**2,085**	**3,593**	**4,417**	**5,157**	**4,248**

[1] Changes in bonds outstanding do not agree with Bank of Canada figures on net new issues due to takeovers, nkruptcies, etc.

Distribution of Bond Holdings.—Table 28 shows the estimated distribution as at ec. 31, 1969 of government and corporate bonds among the major purchasers of securities. overnments and the financial institutions specified in the table held one half of the total; the remainder, non-residents held 22 p.c. and all other residents held 28 p.c. Of the 3 p.c., however, 10 p.c. was made up of holdings by persons of Canada Savings Bonds. he largest identified holders of bonds were chartered banks with 10 p.c. of the total, life surance companies with 8 p.c. and trusteed pension plans with 8 p.c.

28.—Estimated Distribution of Bond Holdings, as at Dec. 31, 1969

NOTE.—Federal, provincial and municipal bonds include direct and guaranteed issues; "other" bonds include nds of religious and other institutions; and a small amount of foreign bonds payable in Canadian dollars; short-rm commercial borrowing is excluded. SOURCE: *Bank of Canada Statistical Summary 1970*, pp. 530, 959 and 960.

Holder	Government of Canada Bonds	Provincial Government Bonds	Municipal Government Bonds	Corporate and Other Bonds	Total	P.C. of Total
	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000	
nk of Canada	4,112	—	—	351	4,463	6.9
artered banks	5,093	364	368	718	6,543	10.1
overnment of Canada	1,033	2,640[1]	—	—	3,673	5.6
ovincial governments	493	2,336	271	351	3,451	5.3
unicipal governments	63	127	620	50	860	1.3
e insurance companies	452	1,094	678	2,780	5,004	7.7
her insurance companies	685	593	202	481	1,961	3.0
ebec savings banks	35	47	30	46	158	0.2
ust and loan companies	728	338	103	362	1,531	2.4
usteed pension plans	325	2,707	732	1,325	5,089	7.8
other resident	9,916[2]	3,612	1,966	2,414	17,908	27.6
on-resident	967	5,864	1,674	5,828	14,333	22.1
All Holders	**23,902**	**19,722**	**6,644**	**14,706**	**64,974**	**100.0**

[1] Held by the Canada Pension Plan Investment Fund. [2] Includes Canada Savings Bonds of $6,683,000,000.
rporations and other businesses, churches, charities and other associations were made eligible to purchase Canada vings Bonds for the first time with the 1967-68 series. For the 1969-70 series, Canada Savings Bonds could not registered in the name of a corporation or other business.

PART II.—INSURANCE*

Section 1.—Life Insurance

Life insurance in force in Canada with companies registered by the Federal Gover ment (exclusive of fraternal benefit societies) amounted to $102,785,000,000 at the e of 1969, an increase of $9,572,000,000 during the year. The ratio of gain in business force, expressed as a percentage of the amount in force at the beginning of the san year, was 10.3 p.c. in 1969.

Year	*In Force at Beginning of Year*	*Increase in Force for the Year*	*Percentage Gain*
	$'000,000	$'000,000	
1930	6,157	335	5.4
1935	6,221	38	0.6
1940	6,776	200	2.9
1945	9,140	612	6.7
1950	14,409	1,337	9.3
1955	23,135	2,317	10.0
1960	40,874	3,775	9.2
1961	44,649	3,635	8.1
1962	48,284	3,949	8.2
1963	52,233	4,571	8.8
1964	56,804	5,868	10.3
1965	62,672	6,984	11.1
1966	69,656	7,168	10.3
1967	76,824	7,981	10.4
1968	84,805	8,408	9.9
1969	93,213	9,572	10.3

Subsection 1.—Summary of Life Insurance in Canada

Table 1 summarizes insurance premiums, claims, amounts of new policies effected a amounts of insurance in force on Dec. 31, 1968 and 1969. These data are presented a cording to supervising government authorities for the companies and societies concerne and according to nationality of company or society.

* Material in this Part, except as otherwise indicated, was prepared under the direction of the Superintendent Insurance for Canada, Ottawa. More detailed data are available in the annual reports of the Department of Insu ance.

1.—Summary of Life Insurance in Canada according to Supervising Government Authorit and by Nationality of Company or Society, 1968 and 1969

Year, Supervising Authority and Nationality of Company or Society	Insurance Premiums	Claims[1]	New Policies Effected	Insurance in Force, Dec. 31
	$'000	$'000	$'000	$'000
1968				
Supervising Authority				
Federally Registered	**1,186,989**	**460,952**	**11,863,550**	**94,623,065**
Companies	1,164,978	453,139	11,516,412	93,212,695
Societies	22,011	7,813	347,138	1,410,370
Provincially Licensed Only	**95,816**	**39,092**	**1,294,152**	**7,001,844**
Within Province of Incorporation—				
Companies	74,689	29,607	994,512	5,483,945
Societies	5,540	3,567	174,311	670,776
Outside Province of Incorporation—				
Companies	11,944	4,340	87,898	657,302
Societies	3,643	1,578	37,431	189,821
Totals	**1,282,805**	**500,044**	**13,157,702**	**101,624,909**

[1] Death, disability and maturity under insurance contracts.

Summary of Life Insurance in Canada according to Supervising Government Authority and by Nationality of Company or Society, 1968 and 1969—concluded

Year, Supervising Authority and Nationality of Company or Society	Insurance Premiums	Claims[1]	New Policies Effected	Insurance in Force, Dec. 31
	$'000	$'000	$'000	$'000
1968				
Nationality of Company or Society				
adian Companies—				
ederally registered	775,091	310,374	7,685,823	64,410,352
rovincially licensed only	86,633	33,947	1,082,410	6,141,247
adian Societies—				
ederally registered	15,429	5,436	306,096	1,110,252
rovincially licensed only	9,183	5,145	211,742	860,597
ish Companies—				
ederally registered	67,356	14,542	803,293	4,517,653
ign Companies—				
ederally registered	322,531	128,223	3,027,296	24,284,690
ign Societies—				
ederally registered	6,583	2,377	41,042	300,118
1969				
Supervising Authority				
erally Registered	**1,247,035**	**494,043**	**13,533,391**	**104,398,737**
mpanies	1,218,300	485,547	13,137,769	102,785,116
cieties	28,735	8,496	395,622	1,613,621
incially Licensed Only	**103,909**	**46,628**	**1,434,154**	**7,827,650**
thin Province of Incorporation—				
Companies	83,460	35,603	1,059,647	6,182,184
Societies	4,670	2,961	218,375	693,537
tside Province of Incorporation—				
Companies	13,252	6,226	122,208	795,424
Societies	2,527	1,838	33,924	156,505
Totals	**1,350,944**	**540,671**	**14,967,545**	**112,226,387**
Nationality of Company or Society				
dian Companies—				
derally registered	811,885	330,847	8,495,669	70,760,763
ovincially licensed only	96,712	41,829	1,181,855	6,977,608
dian Societies—				
derally registered	21,916	6,117	355,424	1,299,362
ovincially licensed only	7,197	4,799	252,299	850,042
sh Companies—				
derally registered	73,010	15,260	950,253	5,096,175
gn Companies—				
derally registered	333,406	139,440	3,691,846	26,928,178
gn Societies—				
derally registered	6,819	2,379	40,198	314,259

[1] Death, disability and maturity under insurance contracts.

Subsection 2.—Operational Statistics for Life Insurance Transacted in Canada by Companies under Federal Registration

The amount of life insurance in force in Canada has shown an almost continu advance year by year since the beginning of the record in 1869. The amount per cap of the estimated population has more than doubled since 1955.

The operations analysed in the tables of this Subsection, with the exception of Tabl include only those of companies under federal registration and are exclusive of frater organizations and provincial licensees. However, companies under federal registrat account for over 93 p.c. of the life insurance in force in Canada.

2.—Life Insurance Effected and in Force in Canada by Companies under Federal Registration, Decennially 1880-1960 and Annually 1961-69

NOTE.—Figures for 1869-1900 are given in the 1938 Year Book, p. 958; for 1901-39 in the 1942 edition, p. 855 1940-54 in the 1957-58 edition, p. 1168; and for 1955-59 in the 1967 edition, p. 1147. Statistics of fraternal society surance, excluded here, are given at pp. 1257-1258.

Year	New Insurance Effected during Year	Insurance in Force Dec. 31				Insuran in For per Capit
		Canadian Companies	British Companies	Foreign Companies	Total	
	$	$	$	$	$	$
1880	13,906,887	37,838,518	19,789,863	33,643,745	91,272,126	
1890	39,802,956	135,218,990	31,613,730	81,591,847	248,424,567	
1900	67,729,115	267,151,086	39,485,344	124,433,416	431,069,846	
1910	150,785,305	565,667,110	47,816,775	242,629,174	856,113,059	1
1920	630,110,900	1,664,348,605	76,883,090	915,793,798	2,657,025,493	3
1930	884,749,748	4,319,370,209	117,410,860	2,055,502,125	6,492,283,194	6
1940	590,205,536	4,609,213,977	145,603,299	2,220,505,184	6,975,322,460	6
1950	1,798,864,211	10,756,249,942	342,878,530	4,646,707,595	15,745,836,067	1,1
1960	5,692,887,763	30,418,380,871	1,554,844,168	12,675,749,459	44,648,974,498	2,4
1961	6,113,480,078	33,143,378,921	1,778,255,673	13,362,848,638	48,284,483,232	2,6
1962	6,027,069,888	35,907,032,820	2,040,700,311	14,285,636,913	52,233,370,044	2,8
1963	6,933,120,080	39,135,221,497	2,328,769,718	15,339,860,385	56,803,851,600	3,0
1964	7,802,504,767	43,209,488,534	2,706,336,254	16,756,485,863	62,672,310,651	3,2
1965	8,967,408,329	47,900,424,908	3,070,766,357	18,684,766,954	69,655,958,219	3,5
1966	9,040,333,979	52,622,094,411	3,521,137,968	20,681,132,082	76,824,364,461	3,8
1967	10,391,371,781	58,444,750,160	3,993,899,260	22,366,308,042	84,804,957,462	4,1
1968	11,516,412,171	64,410,352,029	4,517,653,327	24,284,689,877	93,212,695,233	4,4
1969	13,137,768,626	70,760,763,191	5,096,175,029	26,928,177,642	102,785,115,862	4,8

[1] Based on official estimates of population.

3.—Summary of Life Insurance in Canada Transacted by Companies under Federal Registration, 1967-69

Item		1967	1968	1969
Canadian Companies—				
New policies effected during year	No.	417,885	423,224	404,9
	$	6,970,574,222	7,685,823,254	8,495,669,1
Policies in force Dec. 31	No.	5,602,524	5,654,910	5,658,8
	$	58,444,750,160	64,410,352,029	70,760,763,1
Policies ceased by death or maturity	No.	63,172	62,504	60,6
	$	284,243,678	300,029,613	316,513,1
Insurance premiums	$	726,809,318	775,090,687	811,884,3
Claims incurred[1]	$	294,471,357	310,374,110	330,847,1
British Companies—				
New policies effected during year	No.	44,368	46,889	47,4
	$	674,982,834	803,292,793	950,253,3
Policies in force Dec. 31	No.	356,499	375,387	390,6
	$	3,993,899,260	4,517,653,327	5,096,175,0
Policies ceased by death or maturity	No.	2,395	2,654	2,8
	$	13,046,245	14,954,664	15,086,2
Insurance premiums	$	61,458,629	67,355,849	73,009,6
Claims incurred[1]	$	12,976,394	14,542,127	15,260,2

[1] Death, disability and maturity under insurance contracts.

3.—Summary of Life Insurance in Canada Transacted by Companies under Federal Registration, 1967-69—concluded

Item		1967	1968	1969
Foreign Companies—				
New policies effected during year	No.	257,307	238,000	230,252
	$	2,745,814,725	3,027,296,124	3,691,846,143
Policies in force Dec. 31	No.	4,386,789	4,314,016	4,240,980
	$	22,366,308,042	24,284,689,877	26,928,177,642
Policies ceased by death or maturity	No.	73,872	69,732	67,630
	$	116,415,282	123,995,402	131,046,003
Insurance premiums	$	305,555,478	322,531,494	333,405,689
Claims incurred[1]	$	121,181,216	128,222,879	139,439,541
All Companies—				
New policies effected during year	No.	719,560	708,113	682,551
	$	10,391,371,781	11,516,412,171	13,137,768,626
Policies in force Dec. 31	No.	10,345,812	10,344,313	10,290,440
	$	84,804,957,462	93,212,695,233	102,785,115,862
Policies ceased by death or maturity	No.	139,439	134,890	131,093
	$	413,705,205	438,979,679	462,645,308
Insurance premiums	$	1,093,823,425	1,164,978,030	1,218,300,169
Claims incurred[1]	$	428,628,967	453,139,116	485,516,889

[1] Death, disability and maturity under insurance contracts.

4.—Ordinary and Industrial Life Insurance Policies Effected and in Force in Canada by Companies under Federal Registration, 1967-69

Year, Type of Policy and Nationality of Company	New Policies Effected			Policies in Force Dec. 31		
	No.	Amount	Average Amount per Policy	No.	Amount	Average Amount per Policy
		$	$		$	$
1967						
Ordinary Policies—						
Canadian	414,655	4,295,982,701	10,360	5,482,060	32,228,397,857	5,879
British	44,215	621,402,311	14,054	333,884	3,300,589,238	9,885
Foreign	236,807	2,087,205,627	8,814	2,890,330	12,137,062,430	4,199
Industrial Policies—						
Canadian	—	—	—	93,976	54,047,828	575
British	—	—	—	21,653	2,527,557	117
Foreign	17,913	10,312,440	576	1,477,254	638,691,908	432
1968						
Ordinary Policies—						
Canadian	419,359	4,671,029,198	11,138	5,539,219	34,380,205,522	6,207
British	46,732	724,882,961	15,511	353,585	3,730,619,721	10,551
Foreign	234,609	2,242,914,556	9,560	2,918,565	12,841,192,538	4,400
Industrial Policies—						
Canadian	—	—	—	88,139	51,725,588	587
British	—	—	—	20,798	2,393,521	115
Foreign	550	325,572	592	1,376,141	604,151,452	439
1969						
Ordinary Policies—						
Canadian	400,442	4,822,793,466	12,044	5,547,795	36,144,690,958	6,515
British	47,338	775,826,032	16,389	370,036	4,129,716,995	11,160
Foreign	227,776	2,305,284,696	10,121	2,940,069	13,716,754,580	4,665
Industrial Policies—						
Canadian	—	—	—	82,214	48,784,939	593
British	—	—	—	19,564	2,237,972	114
Foreign	—	—	—	1,281,953	569,511,241	444

5.—Group Life Insurance Effected and in Force in Canada by Companies under Federal Registration, 1967-69

Year and Nationality of Company	Effected		In Force Dec. 31			
	Policies	Amount	Policies	Certificates	Amount	Average Amount per Certificate
	No.	$	No.	No.	$	$
1967						
Canadian	3,230	2,674,591,521	26,488	16,767,502	26,162,304,475	1,560
British	153	53,580,523	962	415,639	690,782,465	1,662
Foreign	2,587	648,296,658	19,205	6,332,388	9,590,553,704	1,515
1968						
Canadian	3,865	3,014,794,056	27,552	17,900,409	29,978,420,919	1,675
British	157	78,409,832	1,004	466,576	784,640,085	1,682
Foreign	2,841	784,055,996	19,310	6,803,783	10,839,345,887	1,593
1969						
Canadian	4,379	3,672,875,636	28,844	18,627,791	34,567,287,294	1,856
British	140	174,427,349	1,007	516,275	964,220,062	1,868
Foreign	2,476	1,386,561,447	18,958	7,176,467	12,641,911,821	1,762

6.—Insurance Death Rates in Canada, 1967-69

Type of Insurer	1967			1968			1969		
	Policies Exposed to Risk	Policies Terminated by Death	Death Rate per 1,000	Policies Exposed to Risk	Policies Terminated by Death	Death Rate per 1,000	Policies Exposed to Risk	Policies Terminated by Death	Death Rate per 1,000
	No.	No.		No.	No.		No.	No.	
All companies, ordinary	8,668,603	51,048	5.9	8,785,198	52,753	6.0	8,861,121	52,974	6.0
All companies, industrial	1,655,985	27,082	16.4	1,552,253	26,545	17.1	1,447,145	25,480	17.6
Fraternal benefit societies	499,099	4,264	8.5	518,762	4,445	8.6	547,320	4,576	8.4
Totals	**10,823,687**	**82,394**	**7.6**	**10,856,213**	**83,743**	**7.7**	**10,855,586**	**83,030**	**7.6**

Subsection 3.—Finances of Companies Transacting Life Insurance under Federal Registration

The financial statistics in Tables 7 and 8 relate only to life insurance transacted by companies under federal registration. The figures for British and foreign companies apply to their assets, liabilities and operations in Canada only. On the other hand, the assets and liabilities, revenue and expenditure of Canadian companies are given for total business, including business arising outside of Canada as well as in Canada.

—Total Assets and Liabilities for Life Insurance of Canadian Companies under Federal Registration and Assets and Liabilities in Canada for Life Insurance of British and Foreign Companies under Federal Registration, 1967-69.

Assets and Liabilities	1967	1968	1969
	$	$	$
Canadian Companies			
tal Assets[1]	**13,626,972,600**	**14,441,193,361**	**15,143,352,185**
Bonds	5,253,126,497	5,326,849,817	5,217,326,541
Stocks	874,266,527	1,033,868,902	1,188,893,000
Mortgage loans on real estate	5,741,943,237	6,039,126,694	6,247,613,087
Agreements on sale of real estate	9,765,221	11,923,128	13,999,176
Real estate	448,932,051	497,916,064	578,585,143
Policy loans	687,987,015	780,876,005	959,494,768
Cash	103,812,839	118,773,751	123,479,256
Investment income, due and accrued	135,444,589	146,203,905	155,225,134
Outstanding insurance premiums and annuity considerations	90,545,986	94,946,296	96,905,301
Shares of company's capital stock (purchased under mutualization plan)	2,725,000	—	—
Assets in segregated funds (at market values)	197,983,253	296,378,473	409,984,016
Other assets	80,440,385	94,330,326	151,846,763
tal Liabilities	**12,658,277,874**	**13,366,273,952**	**14,056,278,577**
Actuarial reserve for contracts in force	10,287,323,492	10,784,811,400	11,234,921,140
Outstanding claims under contracts	142,661,392	155,853,479	177,927,385
Amounts on deposit pertaining to contracts	1,103,913,932	1,151,182,443	1,171,332,900
Segregated funds	197,983,253	296,378,473	409,984,016
Other liabilities	926,395,805	978,048,157	1,062,113,136
rplus	946,118,659	1,052,262,157	1,061,795,716
pital stock paid up	22,576,067	22,657,252	25,277,892
British Companies			
sets in Canada[2]	**958,151,715**	**1,071,487,839**	**1,131,156,439**
Bonds	392,435,853	408,414,602	398,114,713
Stocks	136,226,973	182,035,774	200,502,864
Mortgage loans on real estate	342,814,713	377,551,722	405,164,405
Real estate	25,957,071	27,311,002	30,935,354
Policy loans	21,941,397	27,514,775	35,312,100
Cash	2,008,565	4,058,818	4,771,893
Investment income, due and accrued	4,003,436	4,637,637	5,284,284
Outstanding insurance premiums and annuity considerations	2,643,604	2,791,849	2,715,360
Assets in segregated funds	7,541,173	13,344,376	22,906,306
Other assets	22,578,930	23,827,284	25,449,160
abilities in Canada	**932,293,118**	**986,018,078**	**1,005,955,759**
Actuarial reserve for contracts in force	894,701,874	937,758,622	945,636,508
Outstanding claims under contracts	5,964,858	7,549,381	7,087,739
Segregated funds	7,229,010	13,281,338	22,816,086
Other liabilities	24,397,376	27,428,737	30,415,426
cess of assets over liabilities in Canada	**25,858,597**	**85,469,761**	**125,200,680**
Foreign Companies			
sets in Canada[2]	**2,252,891,395**	**2,278,288,484**	**2,324,754,876**
Bonds	1,194,334,588	1,138,205,998	1,059,566,537
Stocks	2,906,975	2,927,535	2,854,346
Mortgage loans on real estate	872,205,714	935,391,387	1,037,801,902
Real estate	18,755,326	18,005,233	17,792,198
Policy loans	102,446,628	113,057,720	125,097,923
Cash	19,438,500	19,447,139	24,388,522
Investment income, due and accrued	27,818,854	29,057,732	30,344,899
Outstanding insurance premiums and annuity considerations	12,060,387	14,003,177	14,391,854
Other assets	2,924,423	8,192,563	12,516,695
abilities in Canada	**2,065,216,461**	**2,119,884,737**	**2,198,948,406**
Actuarial reserve for contracts in force	1,837,788,956	1,879,470,827	1,936,957,784
Outstanding claims under contracts	32,487,493	35,096,340	36,879,757
Other liabilities	194,940,012	205,317,570	225,110,865
cess of assets over liabilities in Canada	**187,674,934**	**158,403,747**	**125,806,470**

[1] At book values. The liabilities include a reserve equal to the amount, if any, by which the total book value bonds, stocks and real estate exceeds the total market value (or amortized value where applicable), subject to provisions of Subsect. (4) of Sect. 71 of the Canadian and British Insurance Companies Act. [2] At market lues.

8.—Total Revenue and Expenditure for Life Insurance Transacted by Canadian Compan under Federal Registration and Revenue and Expenditure in Canada for Life Insurar Transacted by British and Foreign Companies under Federal Registration, 1967-69.

Revenue and Expenditure	1967	1968	1969
	$	$	$
Canadian Companies			
Total Revenue	**2,274,214,119**	**2,421,060,245**	**2,532,874,1**
Insurance premiums and annuity considerations	1,481,704,860	1,580,954,269	1,627,210,7
Investment income	743,522,152	800,137,645	840,996,3
Sundry items	48,987,107	39,968,331	64,667,1
Total Expenditure	**2,163,124,895**	**2,302,286,832**	**2,469,893,6**
Claims incurred	872,779,132	965,876,531	1,072,863,8
Normal increase in actuarial reserve	532,351,537	534,586,691	484,313,5
Taxes, licences and fees	49,643,543	52,450,530	101,804,0
Commissions and general expenses	355,140,752	385,302,625	421,393,1
Sundry items	118,873,527	115,500,157	134,039,3
Dividends to policyholders	216,519,912	230,462,413	248,400,9
Increase in provision for profits to policyholders	17,816,492	18,107,885	7,078,7
Analysis of Increase in Surplus—			
Excess of revenue over expenditure	111,089,224	118,773,413	62,980,5
Net capital gain on investments	−6,077,361	−8,585,831	−37,338,3
Other credits to surplus (net)	12,937,024[1]	−464,681[1]	1,494,9
Net increase in special reserves or funds	−20,415,473	−27,645,508	−32,936,1
Special increase in actuarial reserve	−22,337,756	26,836,752	20,310,0
Dividends to shareholders	−3,581,991	−4,171,991	−5,580,3
Increase in surplus (policyholders and shareholders)	71,613,667	104,742,154	8,930,7
British Companies			
Revenue in Canada	**164,109,694**	**177,213,375**	**193,636,7**
Insurance premiums and annuity considerations	103,647,320	111,103,004	120,233,9
Investment income	56,966,099	63,006,370	69,485,4
Sundry items	3,496,275	3,104,001	3,917,3
Expenditure in Canada	**94,838,908**	**102,188,726**	**119,636,5**
Claims incurred	49,632,776	52,844,074	63,050,8
Taxes, licences and fees	2,284,524	2,466,417	3,864,3
Commissions and general expenses	26,863,706	30,802,614	32,741,6
Other expenditure	3,439,745	3,004,623	3,524,3
Dividends to policyholders	12,618,157	13,070,998	16,455,4
Foreign Companies			
Revenue in Canada	**473,580,036**	**497,931,600**	**521,539,5**
Insurance premiums and annuity considerations	317,220,266	335,916,135	350,051,2
Investment income	130,186,017	136,066,262	145,017,5
Sundry items	26,173,753	25,949,203	26,470,7
Expenditure in Canada	**358,636,278**	**378,547,505**	**439,603,6**
Claims incurred	175,576,731	185,917,531	204,316,9
Taxes, licences and fees	23,903,605	21,321,661	38,147,2
Commissions and general expenses	72,644,944	80,350,803	83,366,2
Other expenditure	23,538,462	25,673,406	47,069,9
Dividends to policyholders	62,972,536	65,284,104	66,703,2

[1] Includes amounts written off shares purchased under mutualization plan.

ubsection 4.—Life Insurance in Canada Transacted by Fraternal Benefit Societies

In addition to life insurance, some fraternal benefit societies grant other insurance nefits to members, notably sickness benefits, but these are relatively unimportant. Table gives statistics of life insurance in Canada transacted by fraternal benefit societies and ble **10** shows statistics of assets, liabilities, income and expenditure relating to all busi- ss of Canadian societies and to the business in Canada of foreign societies. The rates arged by these societies are computed to be sufficient to provide the benefits granted, ving regard for actuarial principles. The benefit funds of each society must be valued nually by a qualified actuary (Fellow, by examination, of the Institute of Actuaries of eat Britain, of the Faculty of Actuaries in Scotland, or of the Society of Actuaries) and eadjustment of rates or benefits must be made, unless the actuary certifies to the solvency each fund. The first sections of Tables **9** and **10** relate to the Canadian societies regis- ed by the federal Department of Insurance; there were 14 such societies at the end of 69.

Under an amendment to the Insurance Act, effective Jan. 1, 1920, all foreign fraternal nefit societies were required to obtain authority from the Federal Government prior to nsacting business in Canada. However, any such societies which at that date were nsacting business under provincial licences, although forbidden to accept new members, re permitted to continue all necessary transactions in respect of insurance already in ce. Most of these societies and some foreign societies that had not been licensed pre- usly by the provinces have since obtained federal authority to transact business. At e end of 1969 there were 32 foreign fraternal benefit societies federally registered to nsact business in Canada, although two of these do not grant life insurance benefits.

9.—Summary of Life Insurance in Canada Transacted by Fraternal Benefit Societies under Federal Registration, 1967-69

Item		1967	1968	1969
Canadian Societies				
miums	$	13,327,778	15,428,510	21,916,464
ims incurred	$	7,280,187	7,844,248	8,769,333
v certificates effected	No.	55,984	48,293	87,435
	$	208,138,924	306,095,810	355,423,627
tificates in force Dec. 31	No.	357,461	374,235	415,646
	$	902,548,080	1,110,251,932	1,299,362,009
tificates ceased by death or maturity	No.	4,194	4,387	4,628
	$	4,563,419	5,060,017	5,702,614
Foreign Societies				
miums	$	6,413,741	6,582,642	6,818,718
ims incurred	$	3,514,533	3,784,558	3,822,154
v certificates effected	No.	12,085	11,788	10,481
	$	35,576,506	41,041,736	40,198,009
tificates in force Dec. 31	No.	150,661	150,722	149,461
	$	282,286,117	300,117,728	314,259,363
tificates ceased by death or maturity	No.	2,016	2,191	2,421
	$	2,087,845	2,262,963	2,352,853

10.—Financial Statistics for Fraternal Benefit Societies under Federal Registration, 1967-

Item	1967	1968	1969
	$	$	$
Canadian Societies[1]			
Assets	**318,587,654**	**352,046,498**	**383,982,037**
Bonds	205,015,952	228,981,103	250,376,497
Stocks	15,953,699	18,364,399	22,401,562
Mortgage loans on real estate	57,450,919	59,550,121	62,004,162
Agreements of sale of real estate	138,256	171,958	62,119
Real estate	16,217,515	16,262,010	16,162,866
Certificate loans and liens	11,799,367	13,752,654	17,656,976
Cash	3,150,812	3,562,895	3,553,178
Investment income, due and accrued	2,898,816	3,365,667	3,877,646
Outstanding premiums, contributions and dues	4,718,960	6,332,369	5,664,363
Other	1,243,358	1,703,322	2,222,668
Liabilities and Surplus	**318,587,654**	**352,046,498**	**383,982,037**
Actuarial reserve	227,574,522	249,920,331	277,774,394
Outstanding claims	3,699,832	4,390,389	4,734,956
Amounts on deposit	2,049,484	2,790,176	3,512,497
Other	57,190,130	64,212,452	72,117,258
Surplus	28,073,686	30,733,150	25,842,932
Revenue	**73,571,970**	**83,589,916**	**94,929,451**
Premiums, contributions and dues	56,634,217	64,500,334	73,014,042
Investment income	15,614,772	17,596,185	20,095,113
Other	1,322,981	1,493,397	1,820,296
Expenditure	**70,678,496**	**77,870,531**	**93,468,896**
Claims incurred	19,140,736	21,477,598	23,703,448
Increase in actuarial reserve	19,767,568	21,048,750	27,851,721
Taxes, licences and fees	305,656	464,876	966,507
Commissions	8,774,670	10,938,470	12,007,444
General expenses	13,429,755	14,311,065	18,457,818
Other	1,624,569	2,180,979	2,134,314
Dividends to members	6,402,283	6,773,872	7,426,866
Increase in provision for dividends to members	1,233,259	674,921	920,778
Analysis of Increase in Surplus—			
Excess of revenue over expenditure	2,893,474	5,719,385	1,460,555
Net capital gain on investments	1,019,787	−620,250	480,172
Other credits to surplus (net)	122,183	114,754	−316,941
Net increase in special reserves	−5,179,147	−2,561,447	−6,403,880
Increase in surplus	−1,143,703	2,652,442	−4,780,094
Foreign Societies[2]			
Assets	**64,850,148**	**66,634,704**	**66,746,362**
Bonds	53,456,934	53,788,486	52,467,774
Stocks	707,591[3]	865,155	824,243
Mortgage loans on real estate	3,979,907	5,017,723	6,175,377
Certificate loans and liens	3,469,857	3,640,064	4,029,574
Cash	2,109,956[3]	1,989,519	2,013,648
Investment income, due and accrued	917,153	968,995	1,011,211
Outstanding premiums, contributions and dues	206,774	212,898	221,881
Other	1,976	151,864	2,654
Liabilities	**54,543,371**	**57,446,134**	**60,588,193**
Actuarial reserve	49,030,535	51,048,639	53,667,810
Outstanding claims	578,265	637,282	639,208
Other	4,934,571	5,760,213	6,281,175
Revenue	**12,053,246**	**12,604,650**	**13,060,922**
Premiums, contributions and dues	8,094,992	8,274,104	8,455,872
Investment income	3,424,021[3]	3,698,593	3,950,956
Other	534,933[3]	631,953	654,094
Expenditure	**7,126,382[3]**	**7,794,643**	**8,641,234**
Claims incurred	4,389,434	4,626,219	4,757,459
Taxes, licences and fees	110,364[3]	51,532	352,263
Commissions	622,641[3]	637,808	670,372
General expenses	731,586[3]	1,093,748	1,099,062
Other	401,238[3]	384,285	492,546
Dividends to members	871,119	1,001,051	1,269,532

[1] All funds, business in and out of Canada. [2] All funds, business in Canada only. [3] Data differ fro
Report of the Superintendent of Insurance for Canada, 1967 (Vol. I) because of revisions made after this Report went
press.

Subsection 5.—Life Insurance Effected and in Force Outside Canada by Canadian Companies under Federal Registration

In this Subsection, there are given for the years 1968 and 1969 summary statistics f insurance effected and insurance in force at the end of the year in currencies other than anadian dollars, as written by Canadian companies under federal registration. The data iven are in terms of Canadian dollars, the conversions from the various foreign currencies aving been made at the book rates of exchange used by the various companies.

Canadian life insurance companies operating under federal registration at Dec. 31, 969 had life insurance in force amounting to $29,239,513,014 in countries outside Canada. nsurance in force in currencies other than Canadian dollars amounted to $29,112,595,945; ne difference between these figures is presumably the net amount of business in countries utside Canada transacted in Canadian currency. The business in force in Canada of anadian companies registered by the Federal Government amounted to $70,760,763,191 t Dec. 31, 1969, and the total business on the books of these companies, in and out of anada, amounted to $100,000,276,205. Thus, over 29 p.c. of the total business in force r Canadian companies registered by the Federal Government was in force in countries utside Canada. In connection with their business outside Canada, the Canadian life surance companies registered by the Federal Government held, at the end of 1969, ommonwealth and foreign investments in the amount of $4,596,137,561.

Approximately 74 p.c. of all business in force in currencies other than Canadian is in nited States currency and 15 p.c. is in sterling. From a slightly different point of view, pproximately 20 p.c. of this business in force is in currencies of Commonwealth countries ther than Canada, and 80 p.c. in currencies of foreign countries.

.—Life Insurance Effected and in Force for Canadian Companies (excluding Fraternal Societies) under Federal Registration, in Currencies other than Canadian Dollars, by Currency, 1968 and 1969.

Currency	1968		1969	
	Insurance Effected	Insurance in Force	Insurance Effected	Insurance in Force
	$	$	$	$
mmonwealth Currencies	**803,835,069**	**5,172,939,504**	**955,040,527**	**5,669,918,200**
Pounds—				
Sterling	614,820,184	3,950,249,828	715,310,352	4,278,287,215
Bermuda	[1]	[1]	2,487,584	10,921,339
British West Indies, Bermuda and Jamaica	68,780,745	342,678,780	8,824,439	46,557,382
Cyprus	—	8,672,836	—	7,485,038
Rhodesia	—	83,906,319	—	78,576,961
Dollars—				
Australia	62,600	87,060	59,300	144,560
Bahamas	18,155,769	105,028,118	24,871,060	125,728,916
British Honduras	—	471,495	—	418,096
British West Indies	99,313,443	592,932,441	3,129,350	33,362,108
East Caribbean			5,110,872	37,013,209
Guyana			72,887,263	382,179,552
Trinidad and Tobago			39,469,951	221,240,681
Hong Kong	2,702,328	31,647,852	5,932,543	35,189,839
Jamaica	[2]	[2]	76,957,813	361,966,654
Malaysia	—	9,434,351	—	5,006,688
Singapore	—	6,557,717	—	9,544,030
Kwachas—				
Zambia	—	12,583,540	—	10,871,244

[1] Included under "British West Indies, Bermuda and Jamaica". [2] Unit changed to "dollar" in 1969.

11.—Life Insurance Effected and in Force for Canadian Companies (excluding Fraterna Societies) under Federal Registration, in Currencies other than Canadian Dollars by Currency, 1968 and 1969—concluded.

Currency	1968		1969	
	Insurance Effected	Insurance in Force	Insurance Effected	Insurance in Force
	$	$	$	$
Commonwealth Currencies—concluded				
Rupees—				
Ceylon	—	15,049,020	—	12,661,17
India	—	1,258,237	—	1,153,38
Pakistan	—	511,723	—	407,11
Shillings—				
East Africa	—	11,870,187	—	11,203,02
Foreign Currencies	**3,036,391,741**	**20,767,793,145**	**3,872,952,116**	**23,442,677,74**
Bahts (Thailand)	—	2,071	—	1,82
Bolivars (Venezuela)	4,340,998	23,333,669	970,027	22,227,13
Colones (El Salvador)	448,922	3,300,797	—	—
Cordobas (Nicaragua)	—	1,333	—	1,19
Dollars (United States of America)	2,772,860,331	19,065,190,270	3,629,147,620	21,651,031,77
Francs (Belgium)	—	729	—	55
Francs (France)	—	37	—	—
Francs (Switzerland)	371,700	482,300	143,400	468,60
Guilders (Netherlands)	—	125,371	—	113,41
Guilders (Netherlands Antilles)	11,043,362	37,908,717	12,998,287	46,773,21
Kyats (Burma)	—	12,731	—	5,94
Pesos (Argentina)	—	230,240	—	145,34
Pesos (Colombia)	96,500	37,400	—	36,20
Pesos (Cuba)	—	29,678,490	—	22,255,56
Pesos (Dominican Republic)	11,603,131	70,952,472	14,397,271	87,340,09
Pesos (Mexico)	—	3,189,761	—	1,504,20
Pesos (Philippines)	23,060,249	117,031,557	24,407,218	131,573,95
Pounds (Israel)	33,221,903	145,964,644	24,953,626	137,787,50
Pounds (Republic of Ireland)	31,873,975	166,426,598	32,442,041	185,371,35
Pounds (United Arab Republic)	—	4,987,215	—	2,923,09
Rand (South Africa)	147,470,670	1,098,934,760	133,492,626	1,153,116,74
Soles (Peru)	—	1,975	—	3
Yen (Japan)	—	8	—	
Totals	**3,840,226,810**	**25,940,732,649**	**4,827,992,643**	**29,112,595,94**

Section 2.—Fire and Casualty Insurance

At the end of 1969 there were 240 companies registered by the Federal Government t transact fire insurance in Canada (82 Canadian, 51 British and 107 foreign). Of thes companies, 233 (78 Canadian, 49 British and 106 foreign) were also registered to transac casualty insurance. In addition, 119 companies were registered by the Federal Govern ment to transact casualty insurance but not fire insurance (33 Canadian, 8 British and 7 foreign). Of the companies registered to transact fire and/or casualty insurance, 95 wer also registered to transact life insurance; 13 of these were registered for fire, life and casualt insurance and 82 for life and casualty but not fire insurance. It should also be noted tha in addition to the companies registered by the Federal Government to transact casualt insurance, there were 31 registered fraternal benefit societies transacting accident and sick ness insurance, of which 29 also transacted life insurance.

The operations analysed in the tables of this Section, with exception of Table 1 include only those companies under federal registration. As shown in Table **12**, some fi and casualty insurance is transacted in Canada by companies that are provincially license only. These companies generally confine their operations to the province of incorporatio

nd many of them are mutual organizations transacting only fire insurance on a county, unicipal or parish basis. The table relates to insurance companies only; no data are ncluded for fraternal benefit societies.

12.—Fire and Casualty Insurance Transacted in Canada, 1968 and 1969

Item	1968		1969	
	Net Premiums Written	Net Claims Incurred	Net Premiums Written	Net Claims Incurred
	$	$	$	$
Fire Insurance				
ederally registered companies[1]	311,052,442	149,497,128	339,465,103	181,026,365
rovincial licensees	48,430,704	21,758,320	47,651,859	24,785,752
In province by which incorporated	*42,795,623*	*18,842,615*	*42,604,954*	*21,591,206*
Outside province by which incorporated	*5,635,081*	*2,915,705*	*5,046,905*	*3,194,546*
oyds, London	11,875,959	9,869,460	9,953,372	9,385,766
Totals, Fire[1]	**371,359,105**	**181,124,908**	**397,070,334**	**215,197,883**
Casualty Insurance				
ederally registered companies[1]	1,305,421,023	844,526,952	1,443,653,149	991,135,482
rovincial licensees	147,887,586	90,657,949	164,410,749	105,556,911
In province by which incorporated	*130,302,912*	*80,642,703*	*142,947,188*	*90,094,200*
Outside province by which incorporated	*17,584,674*	*10,015,246*	*21,463,561*	*15,462,711*
oyds, London	54,780,748	40,286,116	49,523,781	33,827,297
Totals Casualty[1]	**1,508,089,357**	**975,471,017**	**1,657,587,679**	**1,130,519,690**
Totals, Fire and Casualty[1]	**1,879,448,462**	**1,156,595,925**	**2,054,658,013**	**1,345,717,573**

[1] Registered or licensed reinsurance deducted from all companies.

Subsection 1.—Fire Insurance Transacted in Canada by Companies under Federal Registration

Net premiums written and net claims incurred during each year from 1960 to 1969 e given in Table 13 and the figures for 1968 and 1969 are classified by province and tionality of company in Table 14.

13.—Fire Insurance Transacted in Canada by Companies under Federal Registration, 1960-69

ess all reinsurance for Canadian companies and registered or licensed reinsurance only for British and foreign companies)

Year	Net Premiums Written during Year	Net Claims Incurred during Year	Year	Net Premiums Written during Year	Net Claims Incurred during Year
	$	$		$	$
60	200,735,958	100,501,460	1965	224,356,436	111,570,118
61	200,859,825	96,343,611	1966	236,699,967	120,452,654
62	200,768,495	104,472,605	1967	265,400,312	124,354,649
63	196,915,780	125,252,467	1968	286,624,901	136,820,374
64	205,276,365	110,502,299	1969	315,845,707	164,808,137

14.—Fire Insurance in Canada classified by Province and by Nationality of Company under Federal Registration, 1968 and 1969

(Registered or licensed reinsurance deducted)

Year and Province or Territory	Canadian Companies		British Companies		Foreign Companies	
	Net Premiums Written	Net Claims Incurred	Net Premiums Written	Net Claims Incurred	Net Premiums Written	Net Claims Incurred
	$	$	$	$	$	$
1968						
Newfoundland	1,557,508	652,749	1,321,298	736,024	1,856,463	427,59
Prince Edward Island	520,147	253,737	501,038	278,501	255,407	223,07
Nova Scotia	4,658,186	1,952,565	3,063,454	1,201,644	2,502,568	1,416,49
New Brunswick	3,579,935	1,770,545	2,678,417	1,102,546	3,351,091	1,988,23
Quebec	38,859,079	17,573,349	20,511,870	9,495,123	35,702,453	18,152,82
Ontario	49,805,553	23,146,414	22,170,164	11,549,684	44,438,933	20,909,67
Manitoba	6,942,486	3,754,666	2,031,428	2,265,512	3,304,915	1,795,89
Saskatchewan	4,533,028	1,663,881	1,069,303	830,060	2,172,918	955,28
Alberta	9,427,137	3,753,654	3,622,984	1,517,056	6,223,558	3,198,71
British Columbia	13,129,511	6,238,674	6,622,180	3,515,691	13,682,428	6,906,63
Yukon and Northwest Territories	297,502	85,026	334,444	84,555	325,056	101,04
Canada, 1968	**133,310,072**	**60,845,260**	**63,926,580**	**32,576,396**	**113,815,790**	**56,075,47**
1969						
Newfoundland	1,859,871	1,177,584	1,347,683	969,250	2,024,409	762,09
Prince Edward Island	548,815	291,357	532,405	317,414	281,512	143,74
Nova Scotia	5,293,104	2,211,519	3,219,982	1,483,060	3,021,989	1,143,33
New Brunswick	4,198,723	2,117,993	2,684,036	1,746,852	2,907,102	1,632,20
Quebec	41,421,098	21,646,216	21,756,048	12,648,017	38,891,006	21,143,24
Ontario	54,294,117	25,345,849	23,728,799	10,712,926	50,341,595	23,764,10
Manitoba	7,278,480	4,788,891	2,270,584	2,042,493	4,151,638	2,396,35
Saskatchewan	4,598,912	2,363,171	1,027,173	617,546	2,101,504	1,312,48
Alberta	10,628,942	7,518,469	3,582,825	2,469,764	6,563,063	3,570,72
British Columbia	15,206,737	8,051,219	6,708,447	4,144,331	15,857,220	10,498,58
Yukon and Northwest Territories	375,674	1,092,528	379,476	428,702	382,134	474,34
Canada, 1969	**145,704,473**	**76,604,796**	**67,237,458**	**37,580,355**	**126,523,172**	**66,841,21**

Subsection 2.—Fire Losses

The information in Tables **15** to **17**, which deals with the loss of property and lif caused by fire, has been summarized from the annual report *Fire Losses in Canada* prepare by the Dominion Fire Commissioner, Department of Public Works. Federal losses, no included in these figures, in 1968 amounted to $2,203,703 from 1,378 fires; average federa losses for the period 1959-68 amounted to $4,231,769 from an annual average of 1,821 fires

15.—Statistics of Fire Losses, 1959-68

(Excludes forest fires and Federal Government property losses)

Year	Fires Reported	Property Loss	Loss per Capita	Deaths by Fire	Year	Fires Reported	Property Loss	Loss per Capita	Death by Fire
	No.	$	$	No.		No.	$	$	No.
1959	84,241	124,532,238	7.12	560	1964	75,306	148,376,961	7.71	603
1960	79,611	129,327,288	7.24	566	1965	68,432	144,179,977	7.37	589
1961	83,706	128,262,047	7.03	556	1966	68,463	162,718,013	8.17	578
1962	85,585	140,144,643	7.55	626	1967	65,941	162,370,992	7.96	681
1963	83,027	154,051,629	8.15	553	1968	64,657	166,703,354	8.04	654

The provincial property losses given in Table **16** include both insured and uninsure losses.

16.—Fire Losses, by Province, 1964-68

(Excludes forest fires and Federal Government property losses)

ovince or Territory	1964	1965	1966	1967	1968		
	Property Loss				Fires Reported	Property Loss	Loss per Capita
	$	$	$	$	No.	$	$
wfoundland	1,249,077	1,008,886	12,755,810	767,777	556	1,603,224	3.16
nce Edward Island	490,172	829,417	885,967	743,167	433	798,809	7.26
va Scotia	3,896,713	3,627,629	5,078,418	5,595,602	2,092	4,960,289	6.53
w Brunswick	4,285,010	3,766,380	5,914,333	3,476,562	1,221	4,331,661	6.94
ebec	50,101,705	50,677,285	44,776,585	45,020,939	20,169	47,971,987	8.09
tario	48,930,025	49,226,951	44,786,691	55,827,990	22,007	57,844,479	7.92
nitoba	6,438,740	6,155,707	7,362,495	6,020,027	3,409	8,614,608	8.87
katchewan	5,329,669	4,087,775	3,786,903	5,142,078	1,944	3,965,733	4.13
erta	11,560,866	9,997,323	12,005,858	17,618,843	5,505	14,353,838	9.41
tish Columbia	14,985,863	14,137,784	23,145,579	21,490,053	7,010	21,116,971	10.52
kon and Northwest Territories	1,109,121	664,840	2,219,374	667,954	311	1,141,755	24.82
Canada	**148,376,961**	**144,179,977**	**162,718,013**	**162,370,992**	**64,657**	**166,703,354**	**8.04**

17.—Fire Losses, by Type of Property and Cause of Fire, 1966-68

(Excludes forest fires and Federal Government property losses)

Type of Property and Reported Cause of Fire	1966		1967		1968	
	Fires Reported	Property Loss	Fires Reported	Property Loss	Fires Reported	Property Loss
Type of Property	No.	$	No.	$	No.	$
idential	47,554	41,040,560	45,245	42,012,923	44,117	45,372,597
rcantile	4,092	33,613,815	3,994	46,879,649	4,025	40,167,813
m	6,117	16,138,668	5,919	14,849,517	5,746	16,748,773
nufacturing	1,313	36,527,870	1,639	24,417,208	1,508	25,448,766
itutional and assembly	1,245	11,736,416	1,227	11,582,284	1,146	12,410,127
cellaneous	8,142	23,660,684	7,917	22,629,411	8,115	26,555,278
Totals	**68,463**	**162,718,013**	**65,941**	**162,370,992**	**64,657**	**166,703,354**
Reported Cause						
okers' carelessness	22,140	6,447,369	20,675	9,833,567	18,441	8,488,964
ves, furnaces, boilers and smoke pes	3,881	7,882,082	3,768	10,342,961	3,896	9,052,465
ctrical wiring and appliances	8,554	19,848,994	9,109	20,087,534	9,048	22,337,635
ches	2,392	2,664,474	2,329	2,880,188	2,372	3,012,999
ective and overheated chimneys d flues	1,335	2,174,857	985	1,665,129	1,055	1,094,291
ashes, coals and open fires	1,116	1,137,888	1,114	2,556,985	1,258	1,696,440
roleum and its products	1,854	5,510,739	1,857	9,815,832	1,813	7,587,674
nts, other than electric	1,550	3,539,591	1,382	2,769,554	1,385	3,828,789
tning	2,407	3,209,264	2,739	2,832,180	2,929	2,629,103
cks on roofs	329	996,710	175	284,251	208	363,970
osure fires	508	5,124,982	585	1,643,627	604	2,682,701
ntaneous ignition	355	2,910,064	429	2,272,565	386	2,789,480
ndiarism	1,091	5,270,992	1,103	8,098,413	1,268	9,711,868
cellaneous known causes (explo-ons, fireworks, friction, hot grease metal, steam or hot water pipes, c.)	9,193	20,540,024	9,353	14,268,830	10,542	13,902,946
nown	11,758	75,459,983	10,338	73,019,376	9,452	77,524,029

Subsection 3.—Casualty Insurance Transacted in Canada by Companies under Federal Registration

The various classes of casualty insurance are shown in Table 18. These figures relate y to companies registered by the Federal Government.

18.—Net Casualty Premiums Written, Premiums Earned and Claims Incurred in Canada, 1968 and 1969

NOTE.—Excluding marine insurance for which a certificate of registration is not required. Less all reinsura for Canadian companies and registered or licensed reinsurance only for British and foreign companies.

Year and Class of Insurance	Premiums Written				Premiums Earned	Claims Incurre
	Canadian Companies	British Companies	Foreign Companies	Total	All Companies	All Compan
	$	$	$	$	$	$
1968						
Aircraft	682,549	6,811,062	4,973,215	12,466,826	11,823,471	5,706,
Automobile	332,658,275	114,422,471	200,557,284	647,638,030	639,545,871	414,609,
Boiler—						
Boiler	4,358,812	1,024,128	3,182,973	8,565,913	8,615,109	2,787,
Machinery	2,191,114	509,887	1,557,677	4,258,678	4,328,923	1,442,
Credit	323,080	—	699,048	1,022,128	1,010,945	311,
Earthquake	25,812	40,440	35,009	101,261	98,438	2,
Explosion	—	—	90	90	90	
Forgery	90,098	11,399	27,457	128,954	160,584	15,
Guarantee—						
Fidelity	2,926,655	971,345	3,427,033	7,325,033	7,112,987	3,642,
Surety	6,898,486	1,020,695	11,686,826	19,606,007	19,358,021	1,943,
Hail	653,279	214,419	3,100,953	3,968,651	3,968,985	1,142,
Inland transportation	2,714,269	1,814,248	6,417,703	10,946,220	10,675,598	4,751,
Liability—						
Public liability	27,125,735	12,721,648	22,667,938	62,515,321	60,047,782	34,025,
Employers' liability	3,279,330	3,239,024	1,593,764	8,112,118	8,323,298	4,460,
Livestock	70,187	148,360	171,737	390,284	354,666	170,
Mortgage	802,507	—	—	802,507	465,555	8,
Personal accident and sickness	214,151,043	6,583,715	180,063,543	400,798,301	397,497,555	307,465,
Personal property	25,895,133	16,579,071	29,712,968	72,187,172	69,099,288	35,837,
Plate glass	1,735,794	849,980	1,015,635	3,601,409	3,624,967	2,084,
Real property	1,012,977	1,046,411	1,870,145	3,929,533	3,517,530	1,511,
Sprinkler leakage	—	—	—	—	100	
Theft	4,773,797	2,250,163	3,546,798	10,570,758	10,308,013	6,122,
Title	—	—	215,270	215,270	197,104	—
Weather	404	—	3,633	4,037	4,037	1,
Windstorm	717,756	175	96,780	814,711	704,636	332,
Totals, 1968	**633,087,092**	**170,258,641**	**476,623,479**	**1,279,969,212**	**1,260,843,553**	**828,375,**
1969						
Aircraft	446,302	8,863,181	6,232,696	15,542,179	14,826,638	12,569,
Automobile	371,793,542	124,917,416	233,221,720	729,932,678	696,684,177	498,165,
Boiler—						
Boiler	5,135,187	1,286,616	4,119,553	10,541,356	9,997,376	3,032,
Machinery	2,889,341	541,219	2,243,313	5,673,873	5,143,089	1,978,
Credit	488,546	—	770,835	1,259,381	1,221,002	465,
Earthquake	57,012	68,901	89,074	214,987	185,442	2,
Explosion	—	—	90	90	90	
Forgery	118,657	24,452	19,792	162,901	139,933	33,
Guarantee—						
Fidelity	3,531,015	875,649	4,085,337	8,492,001	8,139,346	4,606,
Surety	7,431,621	1,103,467	12,035,193	20,570,281	19,734,306	3,252,
Hail	577,866	434,637	3,189,630	4,202,133	4,199,751	2,933,
Inland transportation	2,973,105	1,715,208	8,573,476	13,261,789	12,606,941	7,801,
Liability—						
Public liability	31,675,462	13,714,819	23,952,820	69,343,101	65,814,083	38,033,
Employers' liability	3,370,838	3,630,745	1,635,182	8,636,765	8,620,357	4,098,
Livestock	104,670	193,830	309,178	607,678	504,744	296,
Mortgage	555,110	—	—	555,110	500,321	3,
Personal accident and sickness	220,794,445	6,344,090	192,180,986	419,319,521	418,938,245	333,422,
Personal property	29,357,869	16,869,162	34,550,655	80,777,686	77,505,463	48,964,
Plate glass	2,128,267	927,262	1,131,859	4,187,388	3,972,885	2,439,
Real property	1,568,070	1,669,041	2,654,872	5,891,983	4,895,443	3,611,
Sprinkler leakage	—	—	—	—	71	—
Theft	5,351,707	2,394,441	3,645,347	11,391,495	11,209,233	7,029,
Title	—	—	134,217	134,217	125,558	—
Weather	670	—	6,033	6,703	6,703	3,
Windstorm	600,121	79	33,835	634,035	734,307	173,
Totals, 1969	**690,949,423**	**185,574,215**	**534,815,693**	**1,411,339,331**	**1,365,705,504**	**972,917,**

Subsection 4.—Finances of Companies Transacting Fire and Casualty Insurance under Federal Registration

The financial statistics of Tables **19** and **20** relate to fire and casualty insurance transed by companies under federal registration. The figures for British and foreign comies apply to their assets, liabilities and operations in Canada only. On the other hand, assets and liabilities, revenue and expenditure of Canadian companies are given for al business, including business arising out of Canada as well as in Canada.

–Total Assets and Liabilities for Fire and Casualty Insurance of Canadian Companies and Assets and Liabilities in Canada for Fire and Casualty Insurance of British and Foreign Companies under Federal Registration, 1967-69.

Assets and Liabilities	1967	1968	1969
	$	$	$
Canadian Companies[1]			
al Assets[2]	**1,099,008,731**	**1,216,430,637**	**1,294,981,998**
onds	635,905,176	688,513,896	732,602,551
ocks	199,769,018	239,612,756	265,304,801
ortgage loans and agreements of sale	43,623,705	55,421,429	63,226,704
eal estate	17,307,780	18,507,032	18,065,479
ash	60,486,791	55,315,878	47,433,767
vestment income, due and accrued	9,489,497	10,844,313	11,929,314
mounts due from agents and uncollected premiums	103,585,492	116,309,093	125,366,893
her assets	63,875,772	64,430,696	79,320,651
djustment for excess of book value over market value	−35,034,500	−32,524,456	−48,268,162
al Liabilities	**799,514,355**	**875,154,998**	**942,437,347**
eserve for unearned premiums	285,115,011	302,865,325	328,296,679
dditional policy reserves	10,631,519	12,712,340	15,142,080
ovision for unpaid claims	333,121,170	383,828,046	429,246,942
vestment, contingency or general reserves	27,057,543	31,353,576	27,784,798
her liabilities	143,589,112	144,395,711	141,966,848
tal stock paid[3]	53,127,198	53,382,386	56,221,836
unt transferred from other funds	17,964,175	23,560,537	27,281,899
lus	228,403,003	264,332,716	269,040,916
British Companies[4]			
ts in Canada[5]	**402,464,629**	**423,827,846**	**430,336,106**
nds	271,025,413	271,777,002	268,767,290
ocks	51,241,576	67,491,368	71,499,378
ortgage loans and agreements of sale	5,239,478	6,198,407	7,958,454
eal estate	2,756,973	2,764,314	2,357,326
sh	13,928,593	18,151,115	15,915,064
vestment income, due and accrued	3,411,641	3,542,385	4,404,990
nounts due from agents and uncollected premiums	42,030,286	41,933,262	45,025,211
her assets	12,830,669	11,969,993	14,408,393
ilities in Canada	**275,493,727**	**280,041,296**	**299,803,935**
serve for unearned premiums	120,453,858	119,774,288	124,067,575
dditional policy reserves	1,220,199	1,540,589	1,401,627
ovision for unpaid claims	129,928,919	137,217,924	150,568,783
her liabilities	23,890,751	21,508,495	23,765,950
ss of assets over liabilities in Canada	**126,970,902**	**143,786,550**	**130,532,171**
Foreign Companies[4]			
ts in Canada[5]	**757,931,778**	**828,020,624**	**900,395,710**
nds	568,410,527	625,068,622	668,932,630
ocks	35,316,879	37,035,470	47,611,232
rtgage loans and agreements of sale	2,051,488	2,018,386	2,244,224

Business in and out of Canada. [2] At book values. The amount, if any, by which the total book value onds, stocks and real estate exceeds the total market value is shown separately as a deduction to assets. uding guarantee fund. [4] Business in Canada only. [5] At market values.

19.—Total Assets and Liabilities for Fire and Casualty Insurance of Canadian Compani and Assets and Liabilities in Canada for Fire and Casualty Insurance of British a Foreign Companies under Federal Registration, 1967-69—concluded.

Assets and Liabilities	1967	1968	1969
	$	$	$
Foreign Companies—concluded			
Assets in Canada—concluded			
Real estate	5,608,386	7,247,800	7,521,8
Cash	35,681,296	37,481,088	38,248,6
Investment income, due and accrued	8,613,986	10,178,414	12,495,1
Amounts due from agents and uncollected premiums	60,623,182	75,780,433	83,397,9
Other assets	41,626,034	33,210,411	39,944,1
Liabilities in Canada	**552,090,607**	**600,488,835**	**691,691,6**
Reserve for unearned premiums	240,682,923	261,821,986	288,985,0
Additional policy reserves	13,606,447	15,107,870	16,291,1
Provision for unpaid claims	235,775,651	269,262,640	319,425,0
Other liabilities	62,025,586	54,296,339	66,990,3
Excess of assets over liabilities in Canada	**295,811,171**	**227,531,789**	**208,704,0**

20.—Underwriting Account and Analysis of Surplus of Canadian Companies and Unde writing Account and Investment Income in Canada of British and Foreign Compani Transacting Fire and Casualty Insurance under Federal Registration, 1968 and 1969.

Item	1968	1969
	$	$
Canadian Companies		
(In and out of Canada)		
Underwriting Account—		
Underwriting income earned	823,717,124	899,174,72
Less disbursements:		
Claims incurred	539,414,039	622,705,15
Commissions and general expenses	247,410,667	280,990,36
Premium taxes, licences and fees	19,514,371	21,574,74
Dividends to policyholders	9,057,598	7,153,68
Underwriting gain or loss (−)	8,320,449	−33,249,21
Analysis of Increase in Surplus—		
Underwriting gain or loss (−)	8,320,449	−33,249,21
Investment income	52,786,264	60,163,10
Other investment account items	2,534,529	−14,271,97
Income taxes	−18,650,327	−7,126,85
Dividends to shareholders	−7,915,134	−8,703,41
Other surplus items	−5,146,438	2,253,61
Premium on capital stock or surplus paid in	182,740	5,869,00
Increase in surplus	32,112,083	4,934,25
British Companies		
Underwriting Account in Canada—		
Underwriting income earned	234,645,495	248,880,88
Less disbursements:		
Claims incurred	134,654,533	161,005,83
Commissions and general expenses	87,982,748	92,667,92
Premium taxes, licences and fees	5,582,161	6,025,13
Dividends to policyholders	8,986	16,60
Underwriting gain or loss (−)	6,417,067	−10,834,61
Income taxes	346,312	1,416,47
Investment income	16,416,068	18,847,11

.—**Underwriting Account and Analysis of Surplus of Canadian Companies and Underwriting Account and Investment Income in Canada of British and Foreign Companies Transacting Fire and Casualty Insurance under Federal Registration, 1968 and 1969**—concluded.

Item	1968	1969
	$	$
Foreign Companies		
derwriting Account in Canada—		
Underwriting income earned	569,711,805	634,021,130
Less disbursements:		
Claims incurred	360,180,827	437,161,517
Commissions and general expenses	170,684,384	193,964,393
Premium taxes, licences and fees	13,559,616	15,161,702
Dividends to policyholders	3,628,459	6,921,051
Underwriting gain or loss (−)	21,658,519	−19,187,533
ncome taxes	9,822,967	5,867,659
nvestment income	37,670,223	44,383,356

Section 3.—Government Insurance

deral Government Insurance

In recent years, various insurance schemes have been adopted by the Federal Governnt or undertaken co-operatively by the federal and provincial governments. Informan on unemployment insurance, hospital insurance, veterans insurance, export credit urance, etc., will be found in the appropriate Chapters on Labour, Health and Welfare, reign Trade, etc.

Deposit Insurance.—During 1967, deposit insurance became available through the mation, by SC 1967, c. 71, of the Canada Deposit Insurance Corporation. The Corporan was established to provide, for the benefit of persons having deposits with a member of Corporation, insurance against the loss of deposits up to a maximum of $20,000 for one depositor.

Membership in the Deposit Insurance Corporation is obligatory for chartered banks, ebec savings banks and those federally incorporated loan and trust companies that ept deposits from the public. Provincially incorporated loan and trust companies that ept deposits from the public are eligible to apply for membership if they have the consent he province of incorporation.

The definition of deposits, as set out in the general by-law of the Corporation, might be mmarized as money received by a member institution that is repayable on demand or ice and money that is repayable on a fixed date not more than five years after the date on ch the money is received. Deposits not payable in Canada or in Canadian currency are insured.

vincial Government Insurance*

Saskatchewan.—The Saskatchewan Government Insurance Office, a Crown coration established by the Saskatchewan Government Insurance Act, 1944, commenced iness in May 1945. It deals in all types of insurance other than sickness and life. The of the legislation is to provide residents of the province with low-cost insurance deed for their particular needs. Rates are based on loss experience in Saskatchewan only the surplus is invested, to the extent possible, within the province. Premium income 1969 amounted to $14,780,063 and earned surplus to $727,075. The total amount le available to the Saskatchewan Government Finance Office from 1945 to Dec. 31,

* Prepared by the provincial authorities concerned.

1969 was $8,618,479. Assets at the latter date were $41,202,657, of which $17,900,0 was invested in bonds and debentures issued by the Province of Saskatchewan and Saskatchewan schools, municipalities and hospitals. Independent insurance agents, nu bering 591, sell government insurance throughout the province.

The Automobile Accident Insurance Act, administered by the Saskatchewan Gover ment Insurance Office on behalf of the provincial government, provides a comprehensi automobile accident insurance plan for the protection of the public in this province. Prem ums paid by motorists create a fund from which benefits are paid in the event of deat injuries and damages sustained in automobile accidents. Any surplus over payments used to increase benefits, reduce premiums, or absorb deficits in periods of high accide frequency. The surplus is not transferable to the general operations of the Saskatchewa Government Insurance Office, nor is any surplus credited to the provincial governmen The plan provides for public liability insurance, with an inclusive limit of $35,000 for bodi injury and property damage, as well as comprehensive and collision coverage subject to $200 deductible for private passenger cars. Rates vary from $5 a year for older farm truc to $94 for late-model private passenger cars, and also vary for other types of motor vehicl depending on size and usage. From the inception of the Act in 1946 to Dec. 31, 1969, mo than $167,000,000 was paid in claims.

The Saskatchewan Government Insurance Office, under contract with the Saskatch wan Department of Natural Resources, offers insurance to farmers covering damage unharvested crops by certain wildlife such as ducks, geese, sandhill cranes, deer, elk, be and antelope.

Information regarding the operation of the Saskatchewan Government Insuran Office or the Automobile Accident Insurance Act may be obtained from the Office Librari Saskatchewan Government Insurance Office, Regina, Sask.

Alberta.—Provincial government insurance in Alberta, coming within the purvie of the Alberta Insurance Act, relates (1) to the Alberta General Insurance Company, which the entire business of the fire branch of the Alberta Government Insurance Offi was vested by the Legislature on Mar. 31, 1948, and (2) to the Life Insurance Compa of Alberta, which was constituted on the same date to take over the life branch of th Alberta Government Insurance Office. Each company is administered by a separa board of directors. The Lieutenant-Governor in Council appoints the members to th respective boards but the charter of the Life Insurance Company of Alberta provides f the election of two policyholder directors. Although both companies are Crown corpor tions, they are not entitled to the usual immunities of the Crown, since they may sue and b sued in any court of competent jurisdiction.

A variety of agencies in Alberta offer forms of prepaid protection corresponding t insurance but the nature of the enabling legislation governing these plans emphasiz the fact that they do not constitute insurance. Because such exemptions are specificall provided by the insurance laws of the province, reference to these plans is necessary onl to make it clear that they do not come within the scope of the Alberta Insurance Ac It should be noted that the Alberta Hail Insurance Act and the Alberta Crop Insurance A are administered by the Alberta Hail and Crop Insurance Corporation and each contains clause exempting its operations from the provisions of the Alberta Insurance Act.

Further information on provincial insurance matters may be obtained from th Superintendent of Insurance, Department of the Provincial Secretary, Edmonton, Alta.

CHAPTER XXVI.—DEFENCE*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. vii of this volume.

Section 1.—The Department of National Defence

The control and management of all matters relating to national defence, the Canadian Armed Forces and the Defence Research Board are the responsibility of the Minister of National Defence; the duties and functions relating to civil emergency operations in peace and war have also been assigned to the Department of National Defence, with the Canadian Forces undertaking the role.

The Canadian Forces Reorganization Act, which came into force on Feb. 1, 1968, "unified" the Royal Canadian Navy, the Canadian Army and the Royal Canadian Air Force into a single service called the Canadian Armed Forces.

Effective Aug. 1, 1964, the Headquarters of the Royal Canadian Navy, the Canadian Army and the Royal Canadian Air Force were integrated to form a single Canadian Forces Headquarters (CFHQ) under a single Chief of Defence Staff. The role of CFHQ is to provide military advice to the Minister of National Defence, the Chief of Personnel, the Chief of Technical Services and the Comptroller General, who are responsible for advising and supporting the Chief of Defence Staff in matters relating to their assigned spheres of activity. The Defence Research Board conducts research relating to the defence of Canada and also undertakes the development of or improvements in materiel.

The civilian administration of the Department is organized under the Deputy Minister and is constituted on a functional basis. The Deputy Minister, assisted by an Associate Deputy Minister, maintains a continuing review and control over the financial aspects of operational policy, logistics, and personnel and administration. Each of three Assistant Deputy Ministers administers a division of the Deputy Minister's Branch responsible for Manpower, Logistics and Finance. Also responsible to the Deputy Minister are the Judge Advocate General, the Departmental Secretary and the Director General of Information Services.

The Defence Council meets at regular intervals to consider and advise on major policy matters. The Council consists of: the Minister of National Defence as Chairman; the Deputy Minister of National Defence, the Chief of Defence Staff, the Chairman of the

* Prepared by the Director General, Information Services, Department of National Defence, Ottawa.

Defence Research Board and the Vice Chief of Defence Staff as members; and a Secretary. The Branch Chiefs at CFHQ, the Vice Chairman of the Defence Research Board and the Associate and Assistant Deputy Ministers are associated members.

Liaison in Other Countries

The Chief of Defence Staff, who is the Canadian Military Representative to the North Atlantic Treaty Organization, is responsible for advice on all NATO military matters and acts as a military adviser to the Government and to Canadian delegations to NATO.* For purposes of liaison and the furtherance of international co-operation in defence, Canada also maintains: (1) the Canadian Defence Liaison Staff London, representing the Canadian Armed Forces and the Defence Research Board in Britain, the Commander of which is the principal military adviser to the Canadian High Commission in London; (2) the Canadian Defence Liaison Staff Washington, representing the Canadian Armed Forces and the Defence Research Board in the United States, the Commander of which is the principal military adviser to the Canadian Ambassador in Washington, and is the Canadian National Liaison Representative to the Supreme Commander, Allied Command Atlantic (SACLANT) Headquarters; two logistic liaison units are also located in the United States; (3) in Brussels, a Canadian member of the NATO Military Committee in Permanent Session, a Military Adviser to the Canadian Permanent Representative to the North Atlantic Council and also a Canadian National Military Representative to SHAPE; and (4) Canadian Forces Attachés in various countries throughout the world. In addition, a number of defence matters of concern to both Canada and the United States are considered by the Permanent Joint Board on Defence, which provides advice on such matters to the respective governments.

Rates of Pay Issuable to the Canadian Forces

The entire pay structure for comparable ranks in the former three services is on a uniform basis. Tables **1**, **2** and **3** contain the monthly rates of pay for officers and men of the Regular Force effective Jan. 1, July 1 or Oct. 1, 1970.

* Canada's contributions to NATO are outlined on p. 189.

1.—Monthly Rates of Pay for Officers of the Canadian Armed Forces, Effective Jan. 1, July 1 or Oct. 1, 1970

Rank	Basic	Annual Incentive Pay Categories											
		1	2	3	4	5	6	7	8	9	10	11	12
	General Officers other than Medical, Dental or Legal[1]												
	$	$	$	$	$	$	$	$	$	$	$	$	$
Brigadier-General	1,910	1,940	1,970	2,000	2,030	...	...	...	...	...	...	...	...
Major-General	2,130	2,170	2,210	2,250	...	...	...	...	...	...	...	...	...
Lieutenant-General	2,390	2,440	2,490	...	...	...	...	...	...	...	...	...	...
	Medical Officers[2]												
	$	$	$	$	$	$	$	$	$	$	$	$	$
Captain	1,150	1,225	1,295	1,365	1,435	1,495	1,555	...	...	...	...	...	...
Major	1,575	1,640	1,705	1,770	1,835	1,900	...	...	...	...	...	...	...
Lieutenant-Colonel	1,840	1,900	1,960	2,020	...	...	...	...	...	...	...	...	...
Colonel	2,020	2,075	2,130	...	...	...	...	...	...	...	...	...	...
Brigadier-General	2,185	2,235	2,285	...	...	...	...	...	...	...	...	...	...
Major-General	2,490	...	...	...	...	...	...	...	...	...	...	...	...

For footnotes, see end of table.

1.—Monthly Rates of Pay for Officers of the Canadian Armed Forces, Effective Jan. 1, July 1 or Oct. 1, 1970—concluded

Rank	Basic	Annual Incentive Pay Categories											
		1	2	3	4	5	6	7	8	9	10	11	12
DENTAL OFFICERS[2]													
	$	$	$	$	$	$	$	$	$	$	$	$	$
tain	1,125	1,190	1,255	1,320	1,385	1,435	1,485	...	...	...	...	...	...
or	1,385	1,445	1,505	1,565	1,625	1,685	...	...	...	...	...	...	...
itenant-Colonel	1,695	1,750	1,805	1,860	...	...	...	...	...	...	...	...	...
onel	1,800	1,870	1,940	2,010	...	...	...	...	...	...	...	...	...
gadier-General	2,170	2,240	...	...	...	...	...	...	...	...	...	...	...
LEGAL OFFICERS[2]													
	$	$	$	$	$	$	$	$	$	$	$	$	$
itenant	654	...	...	...	...	...	...	...	...	...	...	...	...
tain	791	836	881	926	971	...	...	...	...	...	...	...	...
or	1,075	1,120	1,165	1,210	1,255	1,300	1,345	1,375	1,405	...	...	...	...
itenant-Colonel	1,440	1,510	1,580	1,650	1,720	1,790	...	...	...	...	...	...	...
onel	1,890	1,970	2,050	...	...	...	...	...	...	...	...	...	...
gadier-General	2,170	2,280	...	...	...	...	...	...	...	...	...	...	...
OFFICERS OTHER THAN PILOTS, NAVIGATORS, FLIGHT ENGINEERS, MEDICAL, DENTAL OR LEGAL[3]													
	$	$	$	$	$	$	$	$	$	$	$	$	$
nd Lieutenant	400	...	...	...	...	...	...	...	...	...	...	...	...
tenant	525	565	605	645	680	715	730	745	760	775	790	805	...
tenant commissioned m the ranks	785	800	815	830	845	...	...	...	...	...	...	...	...
tain	830	855	880	905	930	955	970	985	1,000	1,015	1,030	...	...
or	1,095	1,120	1,145	1,170	1,195	1,215	1,235	1,255	...	...	...	...	...
tenant-Colonel	1,310	1,345	1,380	1,415	1,450	1,475	1,500	...	...	...	...	...	...
nel	1,635	1,675	1,715	1,755	1,790	1,825	...	...	...	...	...	...	...
PILOTS[3]													
	$	$	$	$	$	$	$	$	$	$	$	$	$
tenant	680	720	760	800	835	870	900	930	945	960	975	990	...
tenant commissioned m the ranks	955	970	985	1,000	1,015	...	...	...	...	...	...	...	...
tain	995	1,025	1,055	1,085	1,115	1,145	1,170	1,195	1,220	1,240	1,260	1,280	1,300
or	1,270	1,295	1,320	1,345	1,370	1,390	1,410	1,430	...	...	...	...	...
tenant-Colonel	1,440	1,475	1,510	1,545	1,580	1,605	1,630	...	...	...	...	...	...
nel	1,685	1,725	1,765	1,805	1,840	1,875	...	...	...	...	...	...	...
NAVIGATORS[3]													
	$	$	$	$	$	$	$	$	$	$	$	$	$
tenant	665	705	745	785	820	855	885	910	925	940	955	970	...
tenant commissioned m the ranks	900	915	930	945	960	...	...	...	...	...	...	...	...
tain	955	985	1,015	1,045	1,075	1,105	1,130	1,155	1,180	1,200	1,220	1,240	1,260
or	1,170	1,195	1,220	1,245	1,270	1,290	1,310	1,330	...	...	...	...	...
tenant-Colonel	1,375	1,410	1,445	1,480	1,515	1,540	1,565	...	...	...	...	...	...
nel	1,685	1,725	1,765	1,805	1,840	1,875	...	...	...	...	...	...	...
FLIGHT ENGINEERS[3]													
	$	$	$	$	$	$	$	$	$	$	$	$	$
tenant	600	640	680	720	755	790	805	820	835	850	865	880	...
tenant commissioned m the ranks	860	875	890	905	920	...	...	...	...	...	...	...	...
tain	905	930	955	980	1,005	1,030	1,045	1,060	1,075	1,090	1,105	...	...
or	1,170	1,195	1,220	1,245	1,270	1,290	1,310	1,330	...	...	...	...	...

Effective Jan. 1, 1970. [2] Effective July 1, 1970. [3] Effective Oct. 1, 1970.

2.—Monthly Rates of Pay for Men of the Canadian Armed Forces, Other Than Flight Engineers and Observers, Effective Oct. 1, 1970

Rank	Pay Level	Incentive Pay Category[1]	Pay Field				
			3	4	5	6	7
			$	$	$	$	$
Private	1	...	250	250	250	250	250
Private	2	...	275	275	275	275	275
Private	3	...	335	341	345	350	357
	3	1	360	366	370	375	382
Private	4	...	395	410	415	422	443
	4	1	418	433	438	445	471
	4	2	441	456	461	468	499
	4	3	464	479	484	491	527
Corporal	5(A)	...	518	553	560	576	623
	5(A)	1	528	563	570	586	633
	5(A)	2	538	573	580	596	643
	5(A)	3	548	583	590	606	653
	5(A)	4	558	593	600	616	663
	5(A)	5	568	603	610	626	673
	5(A)	6	578	613	620	636	683
Corporal[2]	5(B)	...	528	563	570	586	633
	5(B)	1	538	573	580	596	643
	5(B)	2	548	583	590	606	653
	5(B)	3	558	593	600	616	663
	5(B)	4	568	603	610	626	673
	5(B)	5	578	613	620	636	683
	5(B)	6	588	623	630	646	693
Sergeant	6(A)	...	620	656	663	680	729
	6(A)	1	626	662	669	686	735
	6(A)	2	632	668	675	692	741
	6(A)	3	638	674	681	698	747
	6(A)	4	644	680	687	704	753
	6(A)	5	650	686	693	710	759
	6(A)	6	656	692	699	716	765
Warrant Officer	6(B)	...	670	704	711	727	773
	6(B)	1	677	711	718	734	780
	6(B)	2	684	718	725	741	787
	6(B)	3	691	725	732	748	794
	6(B)	4	698	732	739	755	801
	6(B)	5	705	739	746	762	808
	6(B)	6	712	746	753	769	815
Master Warrant Officer	7	...	744	775	781	795	837
	7	1	752	783	789	803	845
	7	2	760	791	797	811	853
	7	3	768	799	805	819	861
	7	4	776	807	813	827	869
	7	5	784	815	821	835	877
	7	6	792	823	829	843	885
Chief Warrant Officer	8	...	856	881	886	897	930
	8	1	866	891	896	907	940
	8	2	876	901	906	917	950
	8	3	886	911	916	927	960
	8	4	896	921	926	937	970
	8	5	906	931	936	947	980
	8	6	916	941	946	957	990

[1] Incentive pay increases are normally granted at yearly intervals.

[2] Rate 5(B) applies to Corporals w are appointed to specific establishment positions that entail additional responsibility.

3.—Monthly Rates of Pay for Flight Engineers and Observers, Effective Oct. 1, 1970

Rank	Pay Level	Incentive Pay Category[1]	Rates of Pay
			$
rporal	5(A)	...	698
	5(A)	1	708
	5(A)	2	718
	5(A)	3	728
	5(A)	4	738
	5(A)	5	748
	5(A)	6	758
rporal[2]	5(B)	...	708
	5(B)	1	718
	5(B)	2	728
	5(B)	3	738
	5(B)	4	748
	5(B)	5	758
	5(B)	6	768
geant	6(A)	...	804
	6(A)	1	810
	6(A)	2	816
	6(A)	3	822
	6(A)	4	828
	6(A)	5	834
	6(A)	6	840
rrant Officer	6(B)	...	848
	6(B)	1	855
	6(B)	2	862
	6(B)	3	869
	6(B)	4	876
	6(B)	5	883
	6(B)	6	890
ster Warrant Officer	7	...	912
	7	1	920
	7	2	928
	7	3	936
	7	4	944
	7	5	952
	7	6	960
ef Warrant Officer	8	...	1,005
	8	1	1,015
	8	2	1,025
	8	3	1,035
	8	4	1,045
	8	5	1,055
	8	6	1,065

[1] Incentive pay increases are normally granted at yearly intervals. [2] Rate 5(B) applies to Corporals who appointed to specific establishment positions that entail additional responsibility.

Allowances Issuable to the Canadian Forces.—The following are the most com- n entitlements, aside from pay, for members of the Regular Forces. Other entitlements ted to special duties and to the Reserve Forces are not shown.

Outfit Allowance.—Female officers receive a single payment of $450 on appointment in t of a free issue of clothing.

Clothing Upkeep Allowance.—All members receive a monthly clothing upkeep allow- e (males $7 and females $8) commencing one year from the date of enrolment subject to ious restrictions which prescribe periods of time during which the allowance is not vable.

Aircrew Allowance.—Aircrew allowance in varying amounts may be paid to a member of rew, or an officer or man undergoing flying training to become a pilot, navigator or other mber of aircrew if he is not already receiving the special rate of pay applicable to pilots navigators.

Foreign Allowance.—Officers and men posted for duty to a country outside of Canad are entitled to allowances to compensate for additional living expenses or hardships in curred; these vary with rank, appointment and location.

Isolation Allowance.—Isolation allowance, at rates that depend on the specific locatio is paid to personnel serving at isolated posts in Canada.

Submarine Allowance.—An officer or man undergoing submarine training or filling a appointment in a submarine receives from $60 to $180 a month, depending on rank.

Parachutist Allowance.—An officer or man undergoing parachutist training or fillin a designated position requiring parachute jumping and not entitled to air specialty allowanc is paid parachutist allowance at the rate of $60 a month.

Air Specialty Allowance.—An officer or man not entitled to aircrew or parachutis allowance who is training in or employed in the duties of certain flight specialties is pai air specialty allowance at the rate of $45 or $60 a month.

Casual Air Duty Allowance.—An officer or man not entitled to air specialty allowanc or aircrew allowance is entitled to casual air duty allowance at the rate of $3, to a maximu of $45 a month, for each day during which he performs duty in an airborne aircraft othe than as a parachutist or as a passenger.

Sea Duty Allowance.—An officer or man serving in a ship receives $30 or $60 a month depending on rank.

Diving Allowance.—An officer or man undergoing diving training or filling an appoint ment as a diver receives from $30 to $150 a month, depending on qualifications.

Section 2.—The Command Structure of the Canadian Forces

The Canadian Forces are organized on a functional basis to reflect the major commit ments assigned by the Government. Under this concept, all Forces devoted to a primary mission are grouped under a single commander who is assigned sufficient resources to dis charge his responsibilities. Specifically, the Canadian Forces are formed into a Canadian Forces Headquarters and seven major Commands reporting to the Chief of the Defence Staff. Canadian Forces Headquarters, in addition to its headquarters function, is re sponsible for the logistic support of the Forces and, for this purpose, retains operationa command of major logistic units. The roles of the Commands are:—

Mobile Command

The role of Mobile Command is: to provide military units suitably trained and equipped to support United Nations or other peace-keeping/peace-restoring operations; to provide ground forces, including tactical air support, for the protection of Canadian territory; and to maintain operational readiness of combat formations in Canada required for support of overseas commitments.

The Forces assigned include: three combat groups in Canada; the Canadian Airborne Regiment; the United Nations Force in Cyprus; two tactical fighter squadrons; one trans port helicopter squadron; and one combat training centre. The combat groups are being reorganized to perform a wide variety of roles and will be provided with air-portable equipment.

The Militia and the Air Reserve components are also controlled and administered by Mobile Command.

Maritime Command

All Canadian Maritime Forces, both sea and air, are under the command of the Com mander Maritime Command whose Headquarters is in Halifax. The Deputy Commander is the Commander Maritime Forces Pacific with Headquarters in Esquimalt. The role of Maritime Command is to defend Canadian interests from assault by sea and to support NATO by assisting in conducting anti-submarine warfare in the Allied Command, Atlantic. The Commander Maritime Command is the NATO Commander of the Canadian Altlantic

Sub-Area of the Western Atlantic Command, under the Supreme Commander, Allied Command Atlantic (SACLANT). Additional roles are to provide any sea lift required by Mobile Command, and to conduct search and rescue operations within the Atlantic and Pacific Search and Rescue Areas (roughly, the Maritime Provinces and British Columbia).

The Naval Reserve component is controlled and administered by Maritime Command.

The resources assigned to Maritime Command include destroyers, operational support ships, submarines, minesweepers, and aircraft for short- and long-range patrol, as well as training and communications facilities within the Command.

Air Defence Command

Air Defence Command participates with the United States in the air defence of North America, through NORAD. It has command of three interceptor squadrons, two SAM squadrons, one SAGE control centre, two BUIC centres and two transcontinental radar lines. Operational control of NORAD assigned forces is exercised by HQ NORAD.

Air Transport Command

The role of Air Transport Command is to provide air transport support to Canadian Forces everywhere, and to conduct search and rescue operations in the Eastern Search and Rescue Area (roughly, Ontario and Quebec). It has five squadrons operating short- and long-range cargo- and troop-carrying aircraft as well as four transport and rescue squadrons.

Training Command

The role of Training Command is to provide individual training for the Canadian Forces and to conduct search and rescue operations within the Western Search and Rescue Area (roughly, Manitoba, Saskatchewan and Alberta). All former training units of the RCN, the Canadian Army and the RCAF where individual training is carried out have been placed under functional control of Training Command. The Canadian Military Colleges (Royal Military College, Royal Roads and Collège militaire royal de Saint-Jean), the Staff Colleges and National Defence College, are under the direct control of Canadian Forces Headquarters (see pp. 1278-1280). Land/air warfare operational training and basic parachutist training are the responsibility of Mobile Command; basic fixed-wing and helicopter pilot training are a Training Command responsibility.

The Canadian Forces Communications Command (CFCC)

The role of the CFCC is to provide fixed communications networks for the Canadian Forces and to provide a national communications system for survival operations (civil defence). To carry out this role, CFCC commands all fixed communications installations within Canada.

Canadian Forces Europe

The Canadian Forces allocated to support NATO in Europe are part of Canadian Forces Europe. The land element is 4 Canadian Mechanized Battle Group operationally responsible to the Central Army Group. The air element, 1 Canadian Air Group, consisting of three CF-104 Starfighter squadrons, is operationally assigned to 4 Allied Tactical Air Force. These elements are located in the Lahr area of Germany and are administratively supported by CFB Europe at Lahr.

dministration of Military Bases in Canada

Staffs and services required below Command Headquarters level to administer and support units based in a particular locality have been organized on Canadian Forces bases. he primary role of each base is to provide base-level administration and supporting services those units located on or near the base. Each base has been allocated to a functional ommander, to whom the base Commander reports.

unction/Regional Organization

Functional Commanders have been assigned a regional as well as a functional responsibility for such actions as representation to provincial governments, aid of the Civil Power, nergency and survival operations, administration of cadets, as well as regional support rvices for all units in the region.

Canada has been divided into five regions which have been assigned to functional ommanders as follows: Atlantic (Newfoundland, Nova Scotia, Prince Edward Island, ew Brunswick)—Maritime Command; Eastern (Quebec)—Mobile Command; Central ntario)—Air Transport Command; Prairie (Manitoba, Saskatchewan, Alberta)—raining Command; Pacific (British Columbia)—Maritime Forces Pacific.

Other Command Elements

Northern Region Headquarters located at Yellowknife, N.W.T., provides representation to the Governments of the Yukon Territory and the Northwest Territories and will exercise a co-ordinating function for all military activities in that region of Canada.

The Canadian Defence Education Establishment controls and administers the staff colleges and military colleges for CFHQ and co-ordinates officer training and development for the Canadian Forces.

Section 3.—Operations

Maritime Forces

The Fleet.—As of September 1970, the following vessels were in service: 18 Destroyer Escorts/Destroyer Escorts Helicopter Equipped (three of which are undergoing major modernization); three Operational Support Ships; three Oberon Class Submarines; one Tench Class Submarine; six Coastal Minesweepers (employed as training vessels); four Gate Vessels (employed as training vessels); one Experimental Hydrofoil; and two Escort Repair Vessels (retained in service as alongside workshops and temporary accommodation vessels). Four Iroquois Class Helicopter Destroyers under construction are expected to join the Fleet in 1972 and 1973.

Operations in 1970.—Maritime Forces participated in six NATO exercises carried out in the North Atlantic and, in addition, one destroyer was assigned to the NATO Standing Naval Force Atlantic throughout the year. Combined exercises with United States Forces were conducted on both the Pacific and Atlantic Coasts and training was conducted in the Bermuda and San Juan areas in order to maintain individual ships at an operational standard. Between these exercises, ships made goodwill visits to the United States, Britain, the Netherlands, Ireland, Denmark, Norway, France, Germany, Italy, Portugal, Mexico and Japan.

Four land-based maritime air squadrons were contributed in 1970 to the Maritime Defence of North America; three of these based on the East Coast and one based on the West Coast are equipped with *Argus* aircraft, the largest modern anti-submarine aircraft in the world. A continuous program of aircraft modernization and re-equipping with improved anti-submarine devices was conducted throughout the year. The East and West Coast squadrons participated in a number of national, international and NATO anti-submarine exercises, and maintained daily patrols and surveillance of ocean areas adjacent to the Canadian coastlines. A shore-based squadron of CS2F-3 (*Tracker*) aircraft was also operational in 1970 in the surveillance role. Up to nine CHSS-2 (*Sea King*) helicopters are borne on Destroyer Escorts (DDH ships) and assist in carrying out long-range ASW surveillance at sea.

Land Forces

Operations in 1970.—In fulfilment of obligations under NATO, Canada continued to provide ground forces for the defence of Western Europe. The 4th Canadian Mechanized Battle Group, the major units of which are the Royal Canadian Dragoons, 1st Regiment Royal Canadian Horse Artillery, 1st Battalion Royal 22e Regiment and 3rd Mechanized Commando, constitutes the Land Forces' contribution in NATO in the Federal Republic of Germany. The Headquarters of the Battle Group is at Lahr and the married quarters are located in the vicinity of Lahr and Baden-Soellingen. Canada has also earmarked from within its Canadian-based Forces a combat group for external reinforcement of the NATO North Flank. Included within this formation is a battalion group held at a high state of readiness for operations on the North Flank under command of the Commander, Allied Command Europe Mobile Force (Land Component) (AMF[L]).

The Canadian Forces continued to provide support for United Nations operations. Canadian participation in the UN Force in Cyprus included provision of a reduced Infantry Battalion, a Canadian Contingent Headquarters and a Canadian element in the UN headquarters—a total of 581 officers and men. A total of 39 officers and men was employed in other UN missions in the Middle East, Kashmir and Korea. In addition, a specially trained and equipped force equivalent to an infantry battalion group in size is maintained in Canada to provide a force for service in support of the UN on short notice to any part of the world.

In addition to its UN commitments, the Canadian Forces, as a result of Canadian participation in the International Commissions for Supervision and Control in Viet-Nam, Cambodia and Laos, provided approximately 21 officers and men for truce supervisory duties in the region formerly known as Indo-China. On Oct. 14, 1969, the Canadian Government announced its decision to withdraw Canadian Delegation personnel from Laos and Cambodia. The Commission in Cambodia adjourned *sine die* on Dec. 31, 1969, and the Delegation subsequently withdrew. The Delegation in Laos was also reduced until, on Feb. 10, 1970, only a small military component was left in Vientiane.

On Sept. 13, 1968, Canada agreed to a request by the Federal Military Government of Nigeria to participate in an International Observer Team in Nigeria. Canadian participation, which had consisted of two officers, terminated on Feb. 27, 1970.

In accordance with obligations embodied in the provision of the National Defence Act and departmental policy, the Canadian Forces provided aid and assistance in response to requests from civil authorities. Major undertakings were: (1) aid to the Government of the Province of Quebec in maintaining law and order in Montreal during the Montreal City Police strike on Oct. 7, 1969; (2) assistance to the Ministry of Transport in a program to minimize the harmful effects of oil pollution caused by the grounding of the tanker *Arrow* in Chedabucto Bay, Feb. 5, 1970; (3) assistance to the Governments of New Brunswick, Saskatchewan and Manitoba during floods in the spring of 1970; and (4) assistance to the Governments of Saskatchewan and Alberta in fighting serious forest fires during the summer of 1970.

Northern Region Headquarters was formed in May 1970. The Headquarters, at present located in Ottawa, will move to Yellowknife, N.W.T., in January 1971 and will initially consist of approximately 50 military personnel. The main role of the Headquarters will be to co-ordinate Canada's increasing military activities north of the 60th parallel of latitude. The Headquarters will also co-ordinate Armed Forces northern activities with other federal agencies, including the Governments of the Yukon Territory and the Northwest Territories.

To help alleviate student summer unemployment, the Department of National Defence operated certain programs for students between the ages of 16 and 24. The programs undertaken in summer 1970 were: Project 1—to employ up to 4,000 persons on general maintenance tasks on Canadian Forces bases and stations; Project 2—to train an additional 500 cadets within existing programs; Project 3—to employ 1,000 persons on range clearance at Canadian Forces Bases Gagetown and Valcartier; Project 4—to support 100 students on leadership training at Collège militaire royal de Saint-Jean in Quebec in co-operation with the Canadian Red Cross and the Department of Manpower and Immigration; Project 5—to provide additional militia training for 7,850 applicants at local units and at militia training centres; Project 6—to provide facilities and equipment to the Department of the Secretary of State for emergency sleeping quarters for transient youths at 14 locations; Project 7—to conduct a pilot trades course for 30 persons to teach engineer-type trades; and Project 8—to provide casual labour employment for 700 persons.

Air Forces

Operations in 1970.—The Canadian Forces contribution to the air defence of North America during the year consisted of three CF-101B interceptor squadrons, two Bomarc surface-to-air missile squadrons and 27 radar sites. These forces, together with the Distant

Early Warning Line (DEW), operated under the operational control of North American Air Defence Command (NORAD). No. 1 CAG (Canadian Air Group), Canada's NATO air contribution in Europe, decreased from six squadrons of CF-104 aircraft to three. Two of these squadrons were employed in the strike/attack role and the other in the photo-reconnaissance/attack role. Mobile Command's two CF-5 squadrons continued to emphasize close support and photo-reconnaissance operations. Additionally, one of the squadrons carried a collateral commitment for basic operational training of pilots destined for CF-5 and CF-104 aircraft.

Air Transport Command (ATC) continued to provide support to CFB Europe using long-range *Boeing 707*, *Yukon* and *Hercules* aircraft. A *Caribou* was maintained in India/Pakistan in support of UN MOGIP. In Canada, ATC airlifted Department of National Defence personnel and cargo from coast to coast and into the Arctic regions. *Hercules* aircraft were employed for paratroop training of the land forces. Search and rescue services were provided in the Canadian areas of responsibility. Throughout the year the Canadian Forces processed some 2,900 separate search and rescue incidents and flew more than 8,700 hours on this task.

The Canadian Forces gave assistance to the Department of External Affairs in providing relief to Peru after an earthquake that occurred on May 31, 1970. This assistance included the airlift of 161,703 lb. of relief supplies from Canada to Peru and the airlift of supplies and evacuation of refugees within Peru, wherein 97 sorties were flown by *Caribou* aircraft, which carried a total of 1,902 passengers and 358,570 lb. of cargo.

Section 4.—Training

All recruit and most basic and advanced trades training in support of the Canadian Armed Forces takes place at various schools under the supervision of Training Command. Maritime Command and Mobile Command maintain functional control of training for their personnel.

The Combat Arms School of the Combat Training Centre, CFB Gagetown, N.B., conducts training for officers and men of the armoured, artillery and infantry units of the Regular and Reserve Forces, ranging from basic trades to advanced courses. Basic trades training for French-speaking personnel is conducted at the Combat Arms School Detachment, CFB Valcartier, Que. Training for field engineers is given at CFB Chilliwack, B.C.

Recruit training takes place at CFB Cornwallis, N.S., for English-speaking recruits and CFB St. Jean, Que., for French-speaking recruits. St. Jean is also the site of the English–French Language Training School. Training in other languages is given at the Canadian Forces Foreign Language School in Vanier City, Ont.

Support trades training is conducted at the School of Administration and Logistics, CFB Borden, Ont., and technical trades training at a number of locations across Canada. Basic technical training in French is conducted at CFB St. Jean, Que.

Flying training to "wings" standard is based in the Prairie Provinces—pilot selection and basic helicopter flying training at Portage la Prairie, Man., basic fixed-wing flying training at Moose Jaw, Sask., and advanced flying training at Gimli, Man. Navigator and observer training is given at Winnipeg. During 1970, 260 pilots, 98 navigators and 70 observers were awarded "wings" and went on to further training in support of tactical air, air defence, long-range air transport operations and search and rescue.

Two Fleet Schools, one at CFB Esquimalt, B.C., and the other at CFB Halifax, N.S., provide basic Maritime trades training as well as training facilities for the operational warships on the East and West Coasts.

Canadian Military Colleges

The three Canadian Military Colleges are the Royal Military College of Canada, founded at Kingston, Ont., in 1876; Royal Roads Military College, established in 1941 near Victoria, B.C.; and Collège militaire royal de Saint-Jean, established at St. Jean, Que.,

imarily to meet the needs of French-speaking cadets. The Royal Military College and e Royal Roads Military College were constituted as the Canadian Service Colleges in 48 and Collège militaire royal de Saint-Jean was opened in 1952. In 1959, the Ontario egislature granted the Royal Military College a charter empowering it to grant degrees. 1967, the Canadian Services Colleges were redesignated as the Canadian Military Colleges, keeping with unification of the Canadian Forces.

The role of the Colleges is to educate and train officer cadets for careers as commissioned ficers in the Canadian Forces. Courses of instruction are designed to develop character d to provide a balanced liberal, scientific and military education leading to degrees in arts, mmerce, science and engineering. The Royal Military College of Canada accepts senior atriculants and offers a four-year course. Royal Roads Military College accepts senior atriculants who, on successful completion of the second year, go to the Royal Military llege of Canada for their third and fourth years. Collège militaire royal de Saint-Jean cepts junior and senior matriculants to pursue a five- or four-year program; the final two ars in some disciplines are completed at the Royal Military College of Canada.

To be eligible for admission to a Canadian Military College, candidates must be single, nadian citizens and physically fit. Candidates must have reached their 16th but not eir 21st birthday on the first day of January preceding entrance, with the exception of nior matriculation candidates for Collège militaire royal de Saint-Jean who must have ached their 16th but not their 20th birthday on the first day of January preceding en- nce. On entry into one of the Canadian Military Colleges, applicants are enrolled as gular Force Officer Cadets in the Canadian Forces. Costs of tuition, uniforms, books, struments and other fees are borne by the Department of National Defence. Officer dets receive a salary of $193 a month and are charged $86 a month for board and lodging. successfully completing their academic and military training, officer cadets are granted rmanent commissions in the Regular Force.

Most officer cadets entering the Canadian Military Colleges enrol under the Regular ficer Training Plan. Provision is also made for the entry of a number of Dominion dets. These are sons of persons who were killed, or died, or are severely incapacitated a result of service in a component of the Canadian Forces, or the Canadian Merchant arine, during hostilities. Dominion cadets enter the Reserve Force and receive free tion during the first academic year at a Canadian Military College. A limited number Reserve cadets who pay tuition and other fees during the duration of the course may also admitted.

During the 1969-70 academic year, 1,124 officer cadets were enrolled at the Canadian litary Colleges, 532 of them at the Royal Military College, 206 at Royal Roads Military llege and 386 at Collège militaire royal de Saint-Jean.

aff and Defence Colleges

The Canadian Land Forces Command and Staff College at Kingston, Ont., gives a -week course for the training of Captains and Majors for command and staff appoint- nts. Although most of the student body is composed of officers of the land element of Canadian Armed Forces, officers from the sea and air elements and from the armies of ier Commonwealth and NATO countries also attend. Instruction involves study of erence material, syndicate discussions, lectures and tutorial indoor and outdoor exercises. addition to military subjects, the curriculum includes studies in the fields of military hnology and operational research; leadership, command and management; national and ernational affairs; communication skills; and geopolitics. The syllabus is enhanced by a iety of expert military and civilian guest lecturers and by visits to Canadian and United tes military and civilian establishments.

The Canadian Forces College in Toronto, consists of three institutions for the staff ining of officers: (1) *The Canadian Forces Staff College* where Majors and Lieutenant- onels from sea, land and air elements of the Canadian Armed Forces take a 44-week rse to prepare them for assumption of higher rank and greater responsibility. The

course includes the study of strategic and military problems; national and international affairs; military technology and operational research; geopolitics; management; and communications skills. (2) *The Canadian Forces Staff School* where all classifications of officers in the rank of Captain take a 10-week course to prepare them to perform staff functions of a general nature that are appropriate to their rank and to provide the foundation for their subsequent professional development. The course includes the study of management and communications skills; national and international affairs; Canada's national defence structure; staff procedures; personnel support services; government and sociology. (3) *The Canadian Forces Extension School* where selected military and academic courses of study by correspondence are offered to all officers of the Canadian Armed Forces.

The National Defence College at Kingston, the senior college of the Canadian Armed Forces, provides a 47-week course to prepare senior military officers in the ranks of Lieutenant-Colonel and Colonel, and senior officers from other government departments and industry, for appointments to positions of higher responsibility, by enabling them to study together those aspects of national and international affairs which determine or significantly affect Canada's policies. Lecturers are chosen from the leaders in various fields in Canada and other countries. In addition, field studies to certain parts of Canada, the United States, Europe, Asia, Africa, Australia and Latin America familiarize students with conditions and influences in their own country and in other countries.

Section 5.—Reserves and Cadets

The Naval Reserve

Recruiting and training of officers and men of the Naval Reserve is conducted mainly through 16 Naval Reserve Units across Canada under the Commander, Maritime Command whose Headquarters is located at Halifax, N.S. Naval Reserve Units are established at the following centres:—

St. John's, Nfld., HMCS *Cabot*
Halifax, N.S., HMCS *Scotian*
Saint John, N.B., HMCS *Brunswicker*
Quebec, Que., HMCS *Montcalm*
Montreal, Que., HMCS *Donnacona*
Toronto, Ont., HMCS *York*
Ottawa, Ont., HMCS *Carleton*
Kingston, Ont., HMCS *Cataraqui*
Hamilton, Ont., HMCS *Star*
Windsor, Ont., HMCS *Hunter*
Thunder Bay, Ont., HMCS *Griffon*
Winnipeg, Man., HMCS *Chippawa*
Saskatoon, Sask., HMCS *Unicorn*
Calgary, Alta., HMCS *Tecumseh*
Vancouver, B.C., HMCS *Discovery*
Esquimalt, B.C., HMCS *Malahat*

Naval Reserve Units, commanded by Reserve Officers, provide both basic and specialized training for officers and men of the Naval Reserve. Additional training is also conducted in Regular Force schools across the country in HMC Ships.

The Militia

Following the review undertaken by the Government in 1969 of Canada's defence and foreign policy, the basic priorities of the defence policy were re-defined, with greater emphasis placed on the protection of Canada's national sovereignty. These decisions, coupled with the need for financial restraints, resulted in changes to the organization and role of the Militia within the general context of the re-defined roles of Canada's Armed Forces as a whole.

The Militia has been reduced to a strength of approximately 19,000 which has been achieved by reductions in unit establishments and in the number of service units. Little change was made in the number of armoured, artillery and infantry units because it is for this type of militiaman that the greatest need is foreseen. The Militia is now composed of 87 major units and 78 minor units, with command and control being exercised through five Militia Area Headquarters and 21 Militia District Headquarters.

The traditional role of the Militia to support the Regular Force has been re-emphasized. ecifically, the Militia will now: (1) provide trained individuals for augmentation and nforcement of the Regular Force; (2) provide trained sub-units to support the field force the defence of Canada and the maintenance of internal security; (3) provide trained rsonnel for the augmentation of the civil emergency operations organization; and (4) form base on which the Regular Force could be expanded in the event of an emergency.

To ensure a closer relationship between the Militia and the Regular Force and to ilitate a training program more closely related to its role, the Militia, less 11 communica- n units, was placed under direct command of Commander, Mobile Command, on Apr. 1, 70. The 11 communication units, whose role is to augment the communication system, re placed under the command of Canadian Forces Communication Command on the ne date.

r Reserve

The active sub-components of the Primary Reserve of the air element are designated Air Reserve, which is made up of six Reserve Flying Squadrons and four Air Reserve gional Headquarters. Montreal and Toronto each has two Flying Squadrons and one Reserve Regional Headquarters; Winnipeg and Edmonton each has a single Flying uadron and an Air Reserve Regional Headquarters. The Air Reserve Regional Head- arters is required to provide the necessary administrative support to the Flying Squadron include all phases from recruiting to release procedures, except for operational control l flying training. All Air Reserve Squadrons are responsible through 10 Tactical Air oup to the Commander, Mobile Command. All Flying Squadrons are equipped with DHC-3 *Otter*. Their role is light tactical air transport and reconnaissance for ground ces. They can be tasked as: (1) tactical air transport, including logistics support, air cuation of casualties, communications and liaison; (2) airborne surveillance in support of und forces in a permissive air environment; (3) aerial photography to provide the und forces with a limited photographic capability that will supplement the reconnais- ce provided by specialized tactical reconnaissance aircraft; (4) aerial, visual, photo- phic operations; and (5) provision of a reserve of trained pilots who could be incorpor- d into the Mobile Command Flying Units if required.

nadian Armed Forces Cadets

The object of the cadet movement in Canada is to provide the opportunity for young h, aged 13 to 18, to acquire the fundamentals of good citizenship and leadership through mbination of training at local cadet units and at summer camps. In keeping with the fied concept of the Canadian Armed Forces, the Sea, Army and Air Cadet organizations e integrated the command and control functions of their respective organizations and pted a common aim: "To develop in youth the attributes of good citizenship and leader- ; to promote physical fitness; and to stimulate their interest in the Sea, Land and Air nents of the Canadian Forces". While cadet officers remain environmental, they are missioned in the Cadet Instructor List which is a sub-component of the Canadian ces Reserve.

Royal Canadian Sea Cadets.—Royal Canadian Sea Cadets, sponsored by the Navy gue of Canada in partnership with the Canadian Forces, comprise 183 corps which are ervised jointly by the local branches of the League and by Regular Force officers. truction at corps level is carried out by Cadet Instructor List (Sea). Two training blishments, *Cornwallis* on the East Coast and *Quadra* on the West Coast, accommodate ers and cadets for two-week training periods in summer. Under an exchange program, Canadian sea cadets exchange visits with an equal number of United States sea cadets the East and West Coasts, and 10 exchange with British sea cadets. In addition, cted cadets receive a six-week training course at Canadian Forces bases. Sea experi- e is provided throughout the year in HMC Ships and Ministry of Transport Ships. f Jan. 31, 1970, the strength of the corps was 1,034 officers and 11,292 cadets.

Royal Canadian Army Cadets.—Supervision of the organization and training Army Cadets is the responsibility of the Regular Force. The training and administrati is the responsibility of officers of the Cadet Instructor List (Army), a sub-component of t Canadian Forces Reserves, and civilian instructors. As of Jan. 31, 1970, officers and civ ian instructors numbered 2,557 and there were 46,350 cadets enrolled in 447 corps.

The International Exchange Visits Program gave Army cadets an opportunity to vis and train abroad; 90 cadets went to Jamaica, Barbados, Trinidad and Tobago, Guyan and Grenada; 16 went to the National Rifle Association matches at Bisley, England, a two officers and 12 cadets attended the Outward Bound Course at Towyn, Wale Cadets from the Caribbean countries trained at Camp Gagetown, N.B., Valcartier, Qu and Ipperwash Cadet Camp, Ont. One officer and 12 cadets from Britain trained at t National Army Cadet Camp at Banff, Alta., and 14 British cadets participated in t Dominion of Canada Rifle Association matches at the Connaught Ranges near Ottaw Seven cadets from Canada attended the U.S. Ranger course at Hawk Mountain, Pa., a a similar number of U.S. Rangers attended Banff National Cadet Camp. Fourteen U. airborne cadets attended a two-week expedition in the Bruce Peninsula in Ontario and fi Canadian airborne cadets trained at the U.S. Airborne Centre in Fort Benning, Ga.

In 1970, 3,850 cadets attended six-week trades and specialist courses at Camp Gag town, N.B., CFB Valcartier in Quebec, CFB Borden, CFB London and Ipperwash Cam in Ontario, CFB Shilo in Manitoba, CFB Calgary in Alberta and CFB Esquimalt and Ve non in British Columbia; 3,413 cadets attended two-week cadet leader and special cam at Camp Gagetown, Valcartier, Montreal, Ipperwash, Shilo, and Vernon; 220 master cade attended the National Army Cadet Camp at Banff for six weeks of training which includ mountain marches, rock-climbing and survival.

Royal Canadian Air Cadets.—The Air Cadet movement operates on the basis of partnership between the Air Cadet League of Canada, a voluntary civilian organization, a the Canadian Armed Forces. The League sponsors and administers air cadet activiti while the Canadian Armed Forces provide training personnel, syllabi and equipment a also assist the League in organization and administration. The objectives of training are encourage air cadets to develop the attributes of good citizenship, to stimulate in them a interest in aviation and space technology, and to help them develop a high standard physical fitness, mental alertness and discipline. The authorized ceiling of cadet enrolme is 30,000; the strength at Jan. 31, 1970, was 28,700 cadets attached to 385 squadrons acro Canada.

During the summer of 1970, camps were conducted at CFB Greenwood, N.S., Bago ville, Que., Trenton, Ont., and Penhold, Alta., attended by 7,920 cadets. A six-week seni leaders' course for 240 cadets, a technical training course for 100 cadets, and a six-we physical training and recreational course for 75 cadets were held at CFB Borden, Ont. bush-familiarization course, teaching the techniques of survival and ground search, w conducted at Namao, Alta., for 54 cadets. Under the International Exchange Visi Program, 62 air cadets were exchanged with Austria, Belgium, Britain, France, Israel, t Netherlands, Norway, Spain, Sweden, Switzerland, the United States and the Feder Republic of Germany.

About 250 senior air cadets receive flying training annually at flying clubs throug Canadian Armed Forces sponsored scholarships; additional scholarships were awarded b the Air Cadet League and other organizations in 1970.

Section 6.—The Defence Research Board

The Defence Research Board is the agency in the Department of National Defen responsible for scientific research. It was created in 1947 by an amendment to t National Defence Act and consists of a full-time chairman and a vice-chairman, five e officio members, and a varying number of members selected from universities and industr

appointed by the Governor in Council. The ex officio members are the Deputy Minister of National Defence, the President of the National Research Council, the Chief of Defence Staff, the Vice Chief of Defence Staff and the Chief of Technical Services. The Chairman is the chief executive officer of the Board's research organization. He is a member of the Defence Council, which is the senior policy body of the Department of National Defence. The Vice-Chairman is an associate member. The Board provides, through the Chairman, scientific advice to the Minister of National Defence and scientific and technical assistance to the Canadian Armed Forces.

The research organization consists of seven research establishments which carry out an intramural program of research specifically oriented toward military needs. The Board also conducts an extramural research program through grants in aid of research to universities. These investigations are usually basic in nature and seek to provide new knowledge in fields from which important military developments are likely to arise. Support is also provided to industry on a cost-sharing basis with the object of promoting and strengthening the applied research.

There are effective arrangements with Canada's allies to ensure mutual use of defence scientific knowledge, resources and facilities. The Board represents Canada on a number of specialist committees through which NATO's scientific endeavours are processed and co-ordinated. The Board maintains liaison offices in Washington, London and Paris.

Research on maritime warfare problems, particularly those relating to submarine detection and tracking, is carried out at the Defence Research Establishment Atlantic and at the Defence Research Establishment Pacific, the latter also being responsible for related research in the Arctic. Research and development of weapons and defence against various weapons is undertaken in co-operation with the Armed Forces at several establishments, the largest of which is the Defence Research Establishment Valcartier. Its principal activities include studies on armaments, night-vision aids and detection devices, lasers, propellants and explosives, aerospace research and weapons systems analysis.

Defence communication studies are carried out by the Communications Research Centre (Department of Communications) on behalf of the Defence Research Board. Research on the defensive aspects of chemical, biological and atomic weapons is carried out at two Defence Research establishments, the Defence Research Establishment Suffield at Ralston, Alta., and the Defence Research Establishment Ottawa; the latter is also responsible for the major northern activities and for power sources.

The Defence and Civil Institute of Environmental Medicine is an amalgamation of the Board's former Defence Research Establishment Toronto and the Canadian Forces Institute of Environmental Medicine, the research and associated facilities being available also to other Federal Government departments and agencies. Its defence program concerns the efficient performance of man in the military role and includes behavioural and bioscience investigations related to all environments. It advises on the physiological and psychological fitness of aircraft crews and on a variety of training projects. Highly specialized assistance in the investigation of accidents in all environments is available both for military and for civil agencies, with particular emphasis on human factors and environmental situations with serious hazard potentials. The Defence Research Analysis Establishment provides scientific evaluation and analysis of present and future weapons systems, tactical doctrine and other aspects of military operations, and studies broad strategic problems.

Thus, the Board continues to support the fields of research which are of foremost interest to the Canadian Armed Forces and the program is under continuing review to ensure that cognizance is taken of all changes in emphasis in defence requirements. Close liaison is maintained between the Defence Research Board and other appropriate departments of government to ensure that research and development activities are closely integrated with production.

Section 7.—Canada Emergency Measures Organization

The Canada Emergency Measures Organization was brought into being to initiate stimulate and co-ordinate the civil aspects of defence policy delegated to federal departments and agencies to meet the threat of nuclear war on Canada. It is also responsible for providing support and guidance to provincial and municipal authorities in the development of their emergency capabilities.

Plans exist at all levels of government for the provision of emergency arrangements for health services, welfare services, employment of manpower and national resources and for practically every area of endeavour that is required to respond in an emergency situation.

The 1969 Year Book, at pp. 1201-1203, contains details of the establishment, powers and functions of Canada EMO, together with an outline of provincial government civil emergency responsibilities.

Section 8.—Defence Construction (1951) Limited

Defence Construction Limited (DCL) was established in 1950 as a Crown company to contract for major military construction and maintenance projects required by the Department of National Defence. The present company was incorporated in 1951 under the authority of the Defence Production Act. In April 1965 the control and supervision of Defence Construction (1951) Limited was transferred from the Minister of Defence Production to the Minister of National Defence. Defence Construction (1951) Limited is a Crown corporation as defined in Part VIII of the Financial Administration Act and listed in Schedule "C" in the Act (see p. 157).

The delineation of responsibility between the Department of National Defence and DCL is as follows. The Department of National Defence, as owner and the design authority, is responsible for providing DCL with complete plans and specifications as well as funds from which contract payments are made; the technical direction and supervision of the work of design consultants as well as procurement of land, when required, is also provided by the Department. Defence Construction (1951) Limited is the contracting and construction supervisory agency. Its function is to obtain tenders, make recommendations regarding awards and to award and to administer major construction and maintenance contracts. Upon request from the Department of National Defence, DCL also engages architects and engineers to prepare plans and specifications in accordance with the requirements of the Department. Contracts are entered into between the contractor or consultant and DCL. As an integral part of its contracting role, DCL is responsible for the administration of the contract, supervision of the construction work, the certification of the contractors' progress claims for payment and that the work has been completed in accordance with the contract and handed over to the Department. The Department of Supply and Services is responsible for payment of contract accounts.

CHAPTER XXVII.—OFFICIAL SOURCES OF INFORMATION AND MISCELLANEOUS DATA

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PART I.—OFFICIAL SOURCES OF INFORMATION

Section 1.—Books About Canada

This basic list of books about Canada, contributed by the National Library, includes selection of publications grouped alphabetically by author and arranged under the subject ssifications of Biography, Country and People, Economics, External Relations, Govern- nt and Politics, History, Literature and the Arts, and General Reference Works. The lection represents many aspects of Canadian life, emphasizes the latest editions of books blished within the past five years, and includes titles issued in either or both English d French, accompanied by the publisher's address.

It should be noted that, although this list is now an annual feature of the Year Book, is not a cumulative presentation; it is limited to about 480 titles, necessitating the omis- n of some items that appeared the preceding year to permit the inclusion of others. For ditional titles, the reader should consult the lists of books in earlier Year Books or one more of the bibliographical collections listed below under the heading "General Reference orks", particularly the monthly or annual editions of *Canadiana* published by the ational Library.

Biography

DDISON, Ottelyn. *Tom Thomson; the Algonquin years*, by Ottelyn Addison in collaboration with Elizabeth Harwood. With drawings and appendix by Thoreau MacDonald. Toronto, Ryerson Press, 1969. 98 p.

AL, J. R., et Poliquin, J.-M. *Les trois vies de Pearson.* Montréal, Éditions de l'Homme, 1968. 269 p.

CHARD, Henri. *L'héroïne indienne Kateri Tekakwitha.* Montréal, Fides, 1967. 200 p.

RGERON, Gérard. *Ne bougez plus! Portraits de 40 politiciens de Québec et d'Ottawa.* Montréal, Éditions du Jour, 1968. 223 p.

ORMAN, Sylvia. *John Toronto; a biography of Bishop Strachan.* Toronto, Clarke, Irwin, 1969. 222 p.

NADA. Department of Public Printing and Stationery. *The founders and the guardians; Fathers of Confederation, Governors-General, Prime Ministers.* Ottawa, Queen's Printer, 1968. 147 p.

CANADA. Département des impressions et de la papeterie publiques. *Fondateurs et gardiens; Pères de la Confédération, Gouverneurs généraux, Premiers ministres.* Ottawa, Imprimeur de la Reine 1968. 147 p.

Canadian writers. Écrivains canadiens. A biographical dictionary edited by—un dictionnaire biographique rédigé par Guy SYLVESTRE, Brandon CONRON, C. F. KLINCK. New ed. rev. and enl. Nouv. éd. rev. et augm. Toronto, Ryerson Press, 1966. 186 p. (Articles by French language authors are in French.)

CARR, Emily. *Hundreds and thousands; the journals of Emily Carr.* Toronto, Clarke, Irwin, 1966. 332 p.

DANDURAND, Raoul. *Les mémoires du sénateur Raoul Dandurand, 1861-1942.* Édités par Marcel HAMELIN. Québec, Presses de l'Université Laval, 1967. 374 p.

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Section 2.—Federal Government Information Services

The preparation and distribution of information on activities of the Federal Government is the responsibility of special divisions operated for this purpose in more than three dozen governmental departments and agencies. Because each of these information divisions concerns itself almost entirely with the functions of its respective branches of government, the Cabinet decided in 1970, upon recommendation of a Task Force which conducted a year-long study of the services, to create a new co-ordinating, advisory and resource unit designated as "Information Canada".

Information Canada's role is not to centralize federal information services, but to assist in offering a better performance and to initiate information programs on subjects dealing with nationhood in general and federalism in particular, which go beyond the interests of individual departments. In addition to providing information to the public through press releases, booklets and other means used in the past, Information Canada has embarked upon the establishment of a network of inquiry centres in the principal centres of Canada where citizens may seek and obtain data on any aspect of Federal Government operations and other matters pertaining to Canadian society as a whole. It has also been assigned the duty of keeping Parliament and Government advised on a continuing basis of the news and comments Canadians are receiving through the news media, of the public's aspirations and complaints and its attitudes toward federal policies and programs as indicated in surveys, polls and other testing methods.

To help Information Canada perform its function, three components attached to other departments of government in the past have been transferred to it. These are the Publishing Division of the Canadian Government Printing Bureau, the Canadian Government Exhibition Commission and the Still Photo Library of the National Film Board. Their staffs comprise more than two thirds of the personnel of the new organization.

The basic assignment the Cabinet has given to Information Canada, as set out by the Prime Minister in a policy statement on information services to Parliament on Feb. 10, 1970, is one of assistance in "bringing government ever closer to the people" and "expanding the dimensions of democratic dialogue in this nation".

Approximately 400 Information Service Officers are engaged in the gathering and dissemination of information relating to operations of the Federal Government. As many more men and women, while not formally classified as such, perform one form of information function or another, either on a full-time basis or in association with other duties.

Among the information services provided by the Government of Canada, those offered by the Dominion Bureau of Statistics are of a particular nature. The Bureau is the chief source of statistical information on all phases of the Canadian economy supplied to both the general public and various branches of government at all levels. The operations of the Bureau are dealt with in greater detail on pp. 1302-1303.

Citizens with specific inquiries concerning Federal Government programs, policies and other aspects of operation should direct these to the information division of the department of government concerned, either at national headquarters in Ottawa or at regional offices where these exist, or they may seek the data desired through the inquiry offices of Information Canada. Inquiries relating to provincial activities may be directed to the provincial government department concerned.

Section 3.—Sale of Official Publications

Under the provisions of Order in Council PC 1970-559, responsibility was transferred from the Queen's Printer to Information Canada for the sale of official publications of Parliament and the Government of Canada that are issued to the public (with a few exceptions covered by statute), as well as the free distribution of all public documents and papers to persons and institutions (libraries) entitled by statute to receive them.

Information Canada issues a *Daily Checklist of Government Publications* which records for the information of the public services, libraries, etc.—Federal Government publicatio immediately upon release. Those authorized by law or regulation to receive free copies such publications receive the *Daily Checklist* without charge; others desiring the servi may purchase an annual subscription to be forwarded daily or in weekly lots as requested.

Information Canada also issues the *Monthly Catalogue of Canadian Government Pu lications*, a comprehensive listing of official publications, public documents and papers n of a confidential nature published at government expense, an *Annual Catalogue* listi publications issued during the previous year, as well as sectional catalogues and selecte titles bulletins advertising new government publications.

Information Canada is the national sales agent in Canada for publications issued b the United Nations; the United Nations Educational, Scientific and Cultural Organizatio the World Health Organization; the Food and Agriculture Organization; the Organizatio for Economic Co-operation and Development; the International Atomic Energy Agenc the International Civil Aviation Organization; the Council of Europe; the Organization American States (Pan American Union); the General Agreement on Tariffs and Trade; th New Zealand Government; the International Labor Organization; the World Meteor logical Organization; the International Telecommunications Union; and the Assembly Western European Union.

Publications of the Canadian Government and international organizations liste above may be obtained from Information Canada bookshops located in Halifax, Ottaw Montreal, Toronto, Winnipeg and Vancouver or by mail from headquarters of Informatio Canada, 171 Slater Street, Ottawa, K1A 0S9.

Section 4.—Publication Services of the Dominion Bureau of Statistics

The Dominion Bureau of Statistics, established by statute in 1918 as Canada's centra statistical agency, has become a vast storehouse of current and historical information o almost every kind of Canadian economic and social activity. It conducts the Census Canada at 10-year intervals (years ending in '1') and five-year intervals (years ending i '6') and, in addition, regularly surveys social and economic change under some 20 broa subject-matter headings. Surveys are conducted monthly, quarterly, annually and a special studies, and the results are published on corresponding bases.

The Bureau is a separate department of government (to be known in future as *Statistic Canada*), reporting to Parliament through the Minister of Industry, Trade and Commerce Its growth, both in personnel and in complexity of statistical activity, has closely parallele the development of the nation as a modern and increasingly sophisticated industrial state The total staff of the Bureau, which includes the largest single body of social scientists i one organization in Canada, has more than doubled in the past 15 years to some 3,300 i 1971.

The Bureau's statistical collection activities range throughout the nation, from larg industrial cities to remote northern areas. The statistics resulting from these activitie vary from well-known national aggregates, such as the national accounts, the consume price index, and employment and unemployment, to small census detail on urban localitie a few city blocks in size. The information produced describes in quantitative terms the eco nomic and social environment, and is used mainly to improve the quality of decision-makin and research in the Canadian economy. Basic uses in the public sector are concerned wit the development and administration of social and economic policies and programs; uses i the private sector are important and extensive, and are frequently in marketing and mer chandising, in connection with the establishment of branch plants, retail outlets and a variety of other projects associated with the generation of economic activity. In addition uses by business include various types of business research and economic forecasting.

DBS information is, for the most part, made available to the public in the form of blications although, for more sophisticated users, there is an increasing output in machine-dable form, such as computer tapes and sets of punch cards. In the most recent count, 3S publications totalled 1,177. Of these, 114 appear monthly or more frequently, 39 are ued quarterly, 377 annually, and 24 every two or three years. The publications pro-ced as a result of the national census include 278 for 1961 and 122 for 1966. The other 3 publications are issued on an occasional basis and include special studies and manuals ociated with statistical activities. DBS statistical reports are increasingly published in ingual form or appear in separate English and French editions.

About 1,250,000 copies of DBS publications are issued yearly on a subscription basis, clusive of the DBS Daily and the DBS Weekly Bulletins which contain information in mmary and preliminary forms and which have a total distribution of some 800,000 copies ear.

The publications program is designed to include the statistical information from each bject area which is most commonly used. However, in response to individual inquiries more detail than may be contained in a regular publication, a large amount of unpub-hed information is issued in the form of special tabulations.

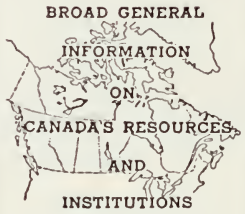
In addition to the publications program, there is a very large secondary distribution of tistical information through newspapers, magazines, trade journals, trade associations d by radio and television broadcasts. Much DBS material also becomes part of a wide ge of reference publications such as year books and encyclopedias and is incorporated o research studies, in books, learned journals, reports of Royal Commissions or Com-ssions of Inquiry, and in a great variety of other public and private documents.

The nature and extent of DBS output is made known to the public in several ways. e principal vehicle is the DBS Catalogue which is issued approximately every two years d kept up to date by means of current supplements. The Catalogue and supplements free on request to DBS headquarters (postal address: Dominion Bureau of Statistics, tawa, Ont.). The catalogue lists and describes the publications issued and the machine-dable and unpublished information that are available. Publications are grouped by bject areas; a commodity index has several thousand entries arranged in alphabetical ler and cross-referenced where necessary to show the several publications in which infor-tion on a given subject may be found.

DBS publications may be obtained from DBS headquarters by using the order form pplied with the Catalogue; they may also be obtained through DBS regional offices in John's, Halifax, Montreal, Ottawa, Toronto, Winnipeg, Edmonton and Vancouver sted in city telephone directories under "Government of Canada"). More frequently d DBS publications are also stocked by Information Canada bookstores in principal nadian cities. Major public and university libraries, provincial libraries and the Na-nal Library in Ottawa have DBS publications available for reference. The DBS rary in Ottawa contains a complete collection of all DBS publications issued since the reau was founded.

DIRECTORY OF SOURCES OF OFFICIAL INFORMATIO

NOTE.—In the "Federal Data" column, the major source of information on each subject is given first; ot sources follow in alphabetical order, with the exception of the National Film Board and the Dominion Bureau Statistics which appear at the end of each listing with which they are concerned, except where they are the m source.

Sources for Federal Data	Subject	Sources for Provincial Data
Information Canada, Enquiries Information Canada, Publishing (*Canada Gazette, Statutes of Canada*, annual, monthly and sectional catalogues) Dominion Bureau of Statistics Bank of Canada Dept. of Agriculture Information Division Dept. of Consumer and Corporate Affairs Information and Public Relations Branch Dept. of Energy, Mines and Resources Public Relations and Information Services Dept. of Finance Information Service Dept. of Fisheries and Forestry Information and Consumer Branch Dept. of Indian Affairs and Northern Development Public Information Adviser Dept. of Industry, Trade and Commerce Publicity Branch Dept. of Labour Public Relations and Information Services Dept. of Manpower and Immigration Information Service Dept. of National Health and Welfare Information Services Dept. of National Revenue Taxation Division, Information Service Dept. of Secretary of State Information Services Dept. of Supply and Services Information Branch National Library National Film Board (films, filmstrips, slide sets on all subjects)		For broad general information regard to particular provinces, app cation should be made to: **Nfld.**, Dept. of Provincial Affairs; **P.E.I.**, Executive Council, Information S vices; **N.S.**, Dept. of Provinc Secretary or Dept. of Trade and I dustry; **N.B.**, Dept. of Natural R sources, Travel Bureau; **Que.**, De of Industry and Commerce, Bure of Statistics, or Dept. of Touris Game and Fish; **Ont.**, Dept. of Tre ury and Economics or Dept. Tourism and Information; **Man.** Dept. of Industry and Commerce Dept. of Government Services; **Sask.** Dept. of Industry and Commerce Executive Council; **Alta.**, Gover ment Publicity Bureau; **B.C.**, Dep of Industrial Development, Trad and Commerce, Economics an Statistics Branch.
Dept. of Agriculture Information Division Canadian Wheat Board Central Mortgage and Housing Corporation (mortgage loans for farm houses) Dept. of Finance (farm improvement loans) Dept. of Industry, Trade and Commerce Agriculture, Fisheries and Food Products Branch Machinery Branch Dept. of Regional Economic Expansion (Prairie Farm Rehabilitation Administration) Dept. of Veterans Affairs (veterans farm loans) Farm Credit Corporation (mortgage loans; Farm Syndicates Credit Act loans) Information Canada, Publishing (agent for FAO publications) National Research Council Prairie Regional Laboratory, Saskatoon, Sask. (utilization of crops and crop products) National Film Board Dominion Bureau of Statistics	AGRICULTURE General and Farming	**Nfld.**:—Dept. of Mines, Agricultur and Resources **P.E.I.**:—Dept. of Agriculture an Forestry **N.S., N.B., Man., Sask., Alta B.C.**:—Depts. of Agriculture **Que.**:—Dept. of Agriculture an Colonization, Information an Research Branch Dept. of Industry and Commerc Bureau of Statistics **Ont.**:—Dept. of Agriculture an Food, Farm Economics an Statistics Branch and Inform tion Branch

Sources for Federal Data	Subject	Sources for Provincial Data
pt. of Indian Affairs and Northern Development ublic Information Adviser pt. of Energy, Mines and Resources olar Continental Shelf Project arth Physics Branch eological Survey of Canada urveys and Mapping Branch Marine Sciences Branch pt. of National Defence nformation Service efence Research Board pt. of National Health and Welfare pt. of Public Works nformation Services (highways, marine and accommodation) heries Research Board of Canada istry of Transport (airports, weather stations, navigation, supply) nformation Services tional Library (books) tional Museums of Canada tional Research Council Division of Building Research (permafrost, building in the North, snow and ice) blic Archives (history) tional Film Board	ARCTIC	**Que.**:—Dept. of Natural Resources, Arctic Quebec Branch **Y.T.**:—Territorial Secretary, Whitehorse, Y.T. **N.W.T.**:—Deputy Commissioner, Yellowknife, N.W.T.
tional Gallery of Canada (collections, exhibitions of works of art) tional Museum of Man ndian and Eskimo Art nada Council nadian Broadcasting Corporation pt. of Indian Affairs and Northern Development Division of Social and Cultural Development (Eskimo arts—visual only) pt. of Public Works nformation Services (fine arts, federal buildings) pt. of Secretary of State ormation Canada, Publishing (National Gallery exhibition catalogues, reproductions of paintings, coloured slides, etc.) tional Arts Centre tional Library (books) tional Film Board (films, filmstrips, slide sets)	ARTS Performing and Visual	**Nfld.**:—Dept. of Provincial Affairs **P.E.I.**:—Dept. of Education **N.S.**:—Dept. of Provincial Secretary **N.B.**:—Dept. of Natural Resources, Travel Bureau **Que.**:—Dept. of Cultural Affairs **Ont.**:—Province of Ontario Council for the Arts **Man.**:—Manitoba Arts Council **Sask.**:—Saskatchewan Arts Board **Alta.**:—Dept. of Provincial Secretary, Cultural Development Branch **B.C.**:—Dept. of Education, Community Programmes Branch
tional Research Council Radio and Electrical Engineering Division (Astrophysics Branch)	ASTRONOMY	
mic Energy of Canada Limited (research studies, sale of radioisotopes) mic Energy Control Board (policy, regulations) pt. of Energy, Mines and Resources nergy Development Group eological Survey of Canada Mines Branch orado Nuclear Limited ormation Canada, Publishing (agent for International Atomic Energy Agency publications) tional Film Board (films, multimedia kits)	ATOMIC ENERGY	**N.S.**:—Dept. of Trade and Industry **Que.**:—Dept. of Natural Resources Hydro-Quebec **Ont.**:—Dept. of Energy and Resources Management The Hydro-Electric Power Commission of Ontario **Man.**:—Dept. of Industry and Commerce, Manitoba Research Council University of Manitoba, Physics Dept. **Sask.**:—University of Saskatchewan Saskatchewan Research Council **Alta.**:—Alberta Research Council **B.C.**:—University of British Columbia

Sources for Federal Data	Subject	Sources for Provincial Data
Ministry of Transport Civil Aviation Branch (control; licensing; airports and air navigation facilities) Information Services Air Canada Canadian Transport Commission Air Transport Committee Dept. of Energy, Mines and Resources Legal Surveys and Aeronautical Charts Division Dept. of Industry, Trade and Commerce Aerospace, Marine and Rail Branch Materials Branch Dept. of National Defence Information Service Dept. of National Health and Welfare Civil Aviation Medicine Division Dept. of Supply and Services Information Canada, Publishing (agent for International Civil Aviation Organization publications) National Museums of Canada (historical) National Research Council National Aeronautical Establishment National Film Board (films) Dominion Bureau of Statistics	AVIATION	**Nfld.**:—Dept. of Mines, Agricultu and Resources **P.E.I.**:—Dept. of Labour, Indus and Commerce **Que.**:—Dept. of Transport, Cen Aerial Transportation Service **Ont.**:—Dept. of Lands and Fore Forest Protection Branch **Man.**:—Manitoba Government Services Dept. of Industry and Commer **Sask.**:—Dept. of Industry and Co merce **Alta.**:—Dept. of Highways a Transport
Bank of Canada Industrial Development Bank Central Mortgage and Housing Corporation Dept. of Finance (for banking; also small business loans) Dept. of Insurance (trust and mortgage loan business) Canada Deposit Insurance Corporation Dominion Bureau of Statistics	BANKING Trust and Loan Companies Foreign Exchange	**Nfld.**:—Dept. of Finance Dept. of Provincial Affairs **P.E.I., N.S.**:—Depts. of Provinc Secretary **N.B.**:—Dept. of Finance Dept. of Provincial Secreta **Que.**:—Dept. of Financial Instit tions, Companies and Co-ope tives Dept. of Industry and Commer Bureau of Statistics **Ont.**:—Province of Ontario Savin Office Ontario Development Corporati Dept. of Financial and Commerc Affairs **Man.**:—Dept. of Provincial Sec tary Manitoba Development Corpor tion Manitoba Agricultural Credit Co poration Dept. of Finance **Sask.**:—Provincial Secretary Dept. of Co-operation and C operative Development **Alta.**:—Treasury Dept., Superi tendent of Treasury Branch Dept. of Attorney General, Alber Security Commission **B.C.**:—Dept. of Finance, Inspect of Trust Companies
Dept. of Consumer and Corporate Affairs Superintendent of Bankruptcy Dominion Bureau of Statistics	BANKRUPTCY	**Nfld.**:—Dept. of Justice **P.E.I.**:—Dept. of Justice ar Attorney General **N.S., N.B., Man., Alta., B.C.**:— Depts. of Attorney General **Que.**:—Minister of Justice **Ont.**:—Dept. of Financial and Con mercial Affairs **Sask.**:—Dept. of Provincial Secr tary

Sources for Federal Data	Subject	Sources for Provincial Data
ational Library (information *re* Canadian publications and books in Canadian libraries; national bibliographies of other countries) formation Canada, Publishing (Official Classification of Canadian Government Publications; annual, monthly and sectional catalogues) brary of Parliament (political and parliamentary matters) ational Gallery of Canada (information on art books and periodicals) ational Research Council National Science Library (information *re* identification and location of scientific serials and research reports) ominion Bureau of Statistics Information Division (for statistical publications)	BIBLIOGRAPHY	**Nfld.:**—Dept. of Education Public Libraries Board Dept. of Provincial Affairs, Archives **P.E.I.:**—Executive Council Secretariat **N.S., N.B.:**—Depts. of Education, Provincial Librarian **Que.:**—National Assembly Library Dept. of Cultural Affairs Quebec Archives National Library of Quebec **Ont.:**—Dept. of Education, Provincial Library Service Legislative Library **Man.:**—Provincial Librarian **Sask.:**—Provincial Library Legislative Library **Alta.:**—Dept. of Provincial Secretary Provincial Library Provincial Museum and Archives **B.C.:**—Dept. of Provincial Secretary Provincial Library and Archives Public Library Commission
ept. of Secretary of State Secretariat on Bilingualism Translation Bureau Bilingualism Programmes Branch Bilingual Districts Advisory Board blic Service Commission Language Bureau	BILINGUALISM	**P.E.I.:**—Dept. of Education
ept. of National Health and Welfare ept. of Indian Affairs and Northern Development (Y.T. and N.W.T.)	BLINDNESS ALLOWANCES	Sources same as for "Old Age Assistance"
nadian Radio-Television Commission nadian Broadcasting Corporation nadian Overseas Telecommunication Corporation ept. of Industry, Trade and Commerce Electrical and Electronics Branch ational Research Council Radio and Electrical Engineering Division (radio science and its application to industry)	BROADCASTING Radio and Television	**P.E.I.:**—Executive Council Secretariat **Que.:**—Dept. of Cultural Affairs Radio Quebec, Film Bureau Dept. of Education **Ont.:**—Ontario Provincial Police, Radio Communications Branch Ryerson Institute of Technology, Toronto, Radio Station CJRT–FM **Sask.:**—Dept. of Natural Resources, Communications Division Saskatchewan Telecommunications **Alta.:**—Radio CKUA, Edmonton, operated by Alberta Government Telephones **B.C.:**—Dept. of Lands, Forests, and Water Resources, Radio Section
ntral Mortgage and Housing Corporation (NHA financing, house designs, building standards) nadian Standards Association ept. of Agriculture (farm building plans) ept. of Finance (Farm Improvement Loans Act; Small Businesses Loans Act) ept. of Fisheries and Forestry Forest Products Laboratories ept. of Indian Affairs and Northern Development Technical Services Branch ept. of Industry, Trade and Commerce Materials Branch Wood Products Branch ept. of Supply and Services Specifications and Standards Branch	BUILDING CONSTRUCTION	**Nfld., N.B.:**—Depts. of Public Works **P.E.I.:**—Dept. of Public Works and Highways **N.S.:**—Dept. of Trade and Industry Dept. of Labour Nova Scotia Housing Commission **Que.:**—Dept. of Municipal Affairs Quebec Housing Corporation Dept. of Industry and Commerce, Bureau of Statistics **Ont.:**—Dept. of Labour, Factory Inspection Branch Ontario Housing Corporation Dept. of Public Works Dept. of Municipal Affairs, Community Planning Branch

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of National Health and Welfare Hospital Design Division Dept. of Public Works Information Services Dept. of Transport Air Services Construction Branch (airport terminal buildings, etc.) Dept. of Veterans Affairs (Soldier Settlement and Veterans Land Act) Farm Credit Corporation National Research Council Division of Building Research National Film Board Dominion Bureau of Statistics	BUILDING CONSTRUCTION *—concluded*	**Man.:**—Dept. of Industry and Commerce **Sask.:**—Dept. of Industry and Commerce Dept. of Labour **Alta.:**—Dept. of Industry and Tourism, Alberta Bureau of Statistics Dept. of Labour **B.C.:**—Dept. of Industrial Development, Trade, and Commerce Economics and Statistics Branch
	CANADA PENSION PLAN *See* "Pensions"	
Dept. of Industry, Trade and Commerce Chemicals Branch Dominion Bureau of Statistics	CHEMICALS	**Que.:**—Dept. of Natural Resources **Ont.:**—Ontario Research Foundation **Man.:**—Dept. of Industry and Commerce **Sask.:**—Dept. of Industry and Commerce **Alta.:**—Alberta Research Council Dept. of Industry and Tourism Industrial Development Branch **B.C.:**—British Columbia Research Council
Dept. of Secretary of State Citizenship Branch Citizenship Registration Branch Citizenship Regional Offices National Film Board	CITIZENSHIP *See also* "Population"	**Que.:**—Dept. of Immigration **Ont.:**—Dept. of Provincial Secretary and Citizenship
Emergency Measures Organization Dept. of National Defence Dept. of National Health and Welfare Emergency Health Services Emergency Welfare Services Dept. of Public Works Emergency Planning Dept. of Supply and Services	CIVIL DEFENCE	**Nfld.:**—Dept. of Provincial Affairs **P.E.I., N.S.:**—Depts. of Provincial Secretary **N.B.:**—Dept. of Municipal Affairs **Que.:**—Dept. of Family and Social Welfare **Ont.:**—Dept. of Attorney General Emergency Measures Organization **Man.:**—Dept. of Municipal Affairs Emergency Measures Organization **Sask.:**—Emergency Measures Organization Executive Council **Alta.:**—Emergency Measures Organization **B.C.:**—Dept. of Provincial Secretary, Provincial Co-ordinator
Canadian Meteorological Service, Toronto Information Canada, Publishing (agent for World Meteorological Organization publications) National Research Council Division of Building Research (Climatological Atlas of Canada, National Building Code)	CLIMATE	**P.E.I.:**—Dept. of Agriculture and Forestry **Que.:**—Dept. of Natural Resources Meteorological Bureau **Ont.:**—Dept. of Agriculture and Food, Farm Economics and Statistics Branch **Man., Alta.:**—Depts. of Agriculture **Sask.:**—Saskatchewan Research Council **B.C.:**—Dept. of Agriculture Dept. of Lands, Forests, and Water Resources, Hydrology Division

Sources for Federal Data	Subject	Sources for Provincial Data
ept. of Energy, Mines and Resources Energy Development Group Geological Survey of Canada Mines Branch ept. of Industry, Trade and Commerce Materials Branch ational Film Board ominion Bureau of Statistics	COAL	**N.S.:**—Dept. of Mines **N.B., Que.:**—Depts. of Natural Resources **Ont.:**—Dept. of Mines Dept. of Energy and Resources Management **Man.:**—Dept. of Mines and Natural Resources, Mines Branch **Sask.:**—Dept. of Mineral Resources Dept. of Industry and Commerce **Alta.:**—Dept. of Mines and Minerals Alberta Research Council **B.C.:**—Dept. of Mines and Petroleum Resources
ept. of Consumer and Corporate Affairs Director of Investigation and Research estrictive Trade Practices Commission	COMBINES	**P.E.I.:**—Dept. of Provincial Secretary
ept. of Communications anadian Radio-Television Commission anadian Broadcasting Corporation anadian Overseas Telecommunication Corporation anadian Transport Commission Railway Committee ept. of Supply and Services Electrical and Electronics Branch formation Canada, Publishing (agent for International Telecommunication Union publications) inistry of Transport (radio aids, aeronautical and marine navigation) Canadian Meteorological Service, Toronto ational Museums of Canada (historical) ational Film Board ominion Bureau of Statistics	COMMUNICATIONS *See also* "Postal Service"	**Nfld.:**—Dept. of Community and Social Development Board of Public Utilities Commissioners **P.E.I.:**—Dept. of Labour, Industry and Commerce Dept. of Public Works and Highways **N.S.:**—Board of Commissioners of Public Utilities **N.B.:**—Dept. of Provincial Secretary, Travel Bureau **Que.:**—Dept. of Communications **Ont.:**—Ontario Telephone Service Commission Ontario Provincial Police, Radio Communications Branch **Man.:**—Manitoba Telephone System **Sask.:**—Saskatchewan Telecommunications **Alta.:**—Alberta Government Telephones **B.C.:**—Dept. of Commercial Transport
ept. of Secretary of State Citizenship Branch Arts and Cultural Support Branch Social Action Branch ompany of Young Canadians ational Film Board	COMMUNITY AND INTER-CULTURAL RELATIONS	**Que.:**—Dept. of Intergovernmental Affairs Dept. of Cultural Affairs
entral Mortgage and Housing Corporation ompany of Young Canadians ept. of Indian Affairs and Northern Development Community Affairs Branch ept. of National Health and Welfare (social welfare and recreation)	COMMUNITY PLANNING	**Nfld.:**—Dept. of Municipal Affairs and Supply Dept. of Community and Social Development **P.E.I.:**—Dept. of Community Services **N.S., N.B.:**—Depts. of Municipal Affairs **Que.:**—Dept. of Municipal Affairs, Industry Branch Planning Bureau **Ont.:**—Dept. of Municipal Affairs, Community Planning Branch Dept. of Education, Community Programmes Branch

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Regional Economic Expansion (rural economic development) National Capital Commission Information Services (general information on the National Capital and the National Capital Region) National Film Board	COMMUNITY PLANNING —*concluded*	Man.:—Dept. of Municipal Affairs Planning Branch Sask.:—Dept. of Municipal Affairs Community Planning Branch Alta.:—Dept. of Municipal Affairs Provincial Planning Office B.C.:—Dept. of Municipal Affairs Regional Planning Division
Dept. of Indian Affairs and Northern Development National and Historic Parks Branch Canadian Wildlife Service Dept. of Energy, Mines and Resources Mines Branch Inland Waters Branch Policy and Planning Branch Dept. of Fisheries and Forestry Information and Consumer Branch Dept. of Regional Economic Expansion Prairie Farm Rehabilitation Administration National Capital Commission (National Capital and National Capital Region planning) National Museums of Canada National Film Board	CONSERVATION	Nfld.:—Dept. of Mines, Agriculture and Resources P.E.I.:—Dept. of Tourist Development N.S.:—Dept. of Lands and Forests N.B.:—Dept. of Natural Resources Que.:—Dept. of Lands and Forests Dept. of Tourism, Game and Fish Dept. of Natural Resources Ont.:—Dept. of Energy and Resources Management, Conservation Authorities Branch Ontario Agricultural College, Guelph Man.:—Dept. of Mines and Natural Resources, Conservation Education Branch Sask.:—Dept. of Natural Resources Dept. of Agriculture, Conservation and Development Branch Alta.:—Dept. of Lands and Forests Dept. of Agriculture (land utilization) B.C.:—Dept. of Lands, Forests and Water Resources Dept. of Recreation and Conservation
Privy Council Office Dept. of Consumer and Corporate Affairs (Great Seal of Canada, etc.) Dept. of Justice Dept. of Secretary of State Information Canada, Publishing (Statutes of Canada, Hansard, Organization of the Government of Canada Handbooks, and Daily Checklist of Government Publications) Library of Parliament Public Archives National Film Board (filmstrips on government)	CONSTITUTION	All Provinces except Nfld., P.E.I., Que. and B.C.:—Depts. of Attorney General Nfld.:—Dept. of Justice P.E.I.:—Executive Council Secretariat Que.:—Dept. of Intergovernmental Affairs B.C.:—Provincial Secretary
Dept. of Consumer and Corporate Affairs Dominion Bureau of Statistics (indexes)	CONSUMER AFFAIRS Consumer Price Indexes *See Also* "Cost of Living"	Nfld.:—Dept. of Provincial Affairs P.E.I., N.S., N.B., Sask.:—Depts. of Provincial Secretary Man.:—Dept. of Consumer and Corporate Affairs Alta.:—Treasury Dept., Consumer Credit Branch B.C.:—Dept. of Attorney General, Consumer Affairs Office

Sources for Federal Data	Subject	Sources for Provincial Data
pt. of Agriculture conomics Branch tral Mortgage and Housing Corporation (mortgage-lending activities) pt. of Consumer and Corporate Affairs orporations Branch pt. of Fisheries and Forestry Economics Service pt. of Indian Affairs and Northern Development ndian-Eskimo Economic Development Branch pt. of Insurance (Co-operative Credit Associations Act) tional Film Board	CO-OPERATIVES (including Credit Unions)	**Nfld.**:—Dept. of Mines, Agriculture, and Resources **P.E.I., N.S.**:—Depts. of Provincial Secretary **N.B.**:—Dept. of Agriculture **Que.**:—Dept. of Financial Institutions, Companies and Co-operatives Dept. of Industry and Commerce, Bureau of Statistics **Ont.**:—Dept. of Agriculture and Food, Co-operatives Branch **Man.**:—Dept. of Agriculture, Co-operative and Credit Union Services Branch Dept. of Finance **Sask.**:—Dept. of Co-operation and Co-operative Development **Alta.**:—Dept. of Industry and Tourism, Co-operative Activities and Credit Union Branch **B.C.**:—Attorney General's Dept., Registrar of Companies
pt. of Consumer and Corporate Affairs minion Bureau of Statistics (wholesale and retail prices and consumer price index)	COST OF LIVING *See also* "Consumer Affairs"	**Nfld.**:—Dept. of Municipal Affairs and Supply **N.B.**:—Dept. of Finance, Economic Adviser **Que.**:—Dept. of Industry and Commerce, Bureau of Statistics **Ont.**:—Dept. of Treasury and Economics **Man.**:—Dept. of Industry and Commerce, Economic, Business and Transportation Research Branch **Sask.**:—Dept. of Labour Dept. of Provincial Secretary **Alta.**:—Dept. of Industry and Tourism, Alberta Bureau of Statistics **B.C.**:—Dept. of Industrial Development, Trade, and Commerce, Economics and Statistics Branch
nada Council pt. of Indian Affairs and Northern Development ndian-Eskimo Economic Development Branch National and Historic Parks Branch pt. of Industry, Trade and Commerce National Design Council pt. of Veterans Affairs (veterans only) ormation Canada, Publishing (UNESCO coloured slides) tional Library (books) tional Museums of Canada blic Archives tional Film Board	CREATIVE ARTS AND HANDICRAFTS	**Nfld.**:—Dept. of Education **P.E.I.**:—Dept. of Tourist Development Dept. of Education, Physical Fitness Division **N.S.**:—Dept. of Trade and Industry, Handicrafts Division Nova Scotia College of Art **N.B.**:—Dept. of Finance **Que.**:—Dept. of Cultural Affairs Dept. of Agriculture and Colonization **Ont.**:—Dept. of Education, Youth and Recreation Branch Dept. of Agricultuie and Food, Home Economics Service Ontario Gift Foundation **Man.**:—Dept. of Agriculture, Extension Service Dept. of Health and Social Development, Native Handicraft Promotion Officer **Sask.**:—Dept. of Education Saskatchewan Arts Board **Alta.**:—Dept of Provincial Secretary, Cultural Development Branch **B.C.**:—Provincial Museum (Indian handicrafts) Dept. of Education, Community Programmes Branch

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Solicitor General Canadian Penitentiary Service National Parole Board Royal Canadian Mounted Police Dept. of Justice Criminal Law Section Dept. of National Health and Welfare Research and Statistics Division National Film Board Dominion Bureau of Statistics	CRIME AND DELINQUENCY	All Provinces except Nfld. a P.E.I.:—Depts. of Attorney G eral Nfld.:—Dept. of Justice Dept. of Social Services and R habilitation P.E.I.:—Dept. of Justice and A torney General *Additional:*—N.S.:—Dept. of Pub Welfare Que.:—Dept. of Family and Soc Welfare Dept. of Justice Dept. of Industry and Commerc Bureau of Statistics Ont.:—Dept. of Correctional Services Man.:—Dept. of Health and Soci Development Sask.:—Dept. of Welfare B.C.:—Dept. of Rehabilitation a Social Improvement
See pp. 152-161 for a list of Crown corporations giving the functions of each and the Cabinet Minister through whom each reports to Parliament.	CROWN CORPORATIONS	Nfld.:—Dept. of Justice Dept. of Public Works P.E.I.:—Executive Council Secr tariat N.S.:—Dept. of Trade and Indust N.B.:—Dept. of Finance and I dustry, Treasury Board Que.:—Dept. of Finance Dept. of Financial Institution Companies and Co-operatives Ont.:—Dept. of Provincial Secreta Man.:—Dept. of Finance Public Utilities Board Sask.:—Government Finance Offi Alta.:—Dept. of Industry a Tourism B.C.:—Attorney General's Dept.
Bank of Canada Royal Canadian Mint	CURRENCY	
Dept. of Agriculture Dairy Division Livestock Division Research Branch Animal Research Institute Food Research Institute Canadian Dairy Commission Dept. of Industry, Trade and Commerce Agriculture, Fisheries and Food Branch National Film Board Dominion Bureau of Statistics	DAIRYING	Nfld.:—Dept. of Mines, Agriculture and Resources P.E.I.:—Dept. of Agriculture an Forestry N.S.:—Dept. of Agriculture N.B., Ont., Alta., B.C.:—Depts of Agriculture, Dairy Branche (also Milk Industry Board o Ont. and Milk Control Boar of B.C.) Que.:—Dept. of Agriculture an Colonization, Dairy Product Branch Dept. of Industry and Commerce Bureau of Statistics Man.:—Dept. of Agriculture, Ani mal Industry Branch Sask.:—Dept. of Agriculture, Ani mal Industry Branch Milk Control Board
	DEATHS See "Vital Statistics"	
Dept. of National Defence Information Service Defence Research Board Dept. of External Affairs (NATO) Dept. of Supply and Services Canadian Commercial Corporation Canadian Arsenals Limited National Film Board	DEFENCE *See also* "Civil Defence"	

Sources for Federal Data	Subject	Sources for Provincial Data
pt. of National Health and Welfare pt. of Veterans Affairs (war disabled veterans)	DISABLED PERSONS ALLOWANCES	Nfld.:—Dept. of Social Services and Rehabilitation P.E.I., Sask.:—Depts. of Welfare N.S.:—Dept. of Public Welfare N.B.:—Dept. of Health and Welfare Que.:—Dept. of Family and Social Welfare, Social Allowances Commission Ont.:—Dept. of Social and Family Services, Family Benefits Branch Man.:—Dept. of Health and Social Development Alta.:—Dept. of Social Development B.C.:—Dept. of Rehabilitation and Social Improvement Y.T.:—Dept. of Welfare (Director) N.W.T.:—Dept. of Social Development (Director)
	DRUGS See "Food and Drugs"	
nomic Council of Canada pt. of Finance pt. of Indian Affairs and Northern Development Northern Economic Development Branch pt. of Manpower and Immigration Program Development Service pt. of Regional Economic Expansion pt. of Secretary of State (financial support to post-secondary education) easury Board	ECONOMIC PLANNING	Nfld.:—Dept. of Community and Social Development P.E.I.:—Planning and Development Board N.S.:—Dept. of Finance and Economics N.B.:—Dept. of Economic Growth Que.:—Executive Council Economic Advisory Council Dept. of Labour and Manpower Dept. of Family and Social Welfare Ont.:—Dept. of Treasury and Economics Man.:—Planning and Priorities Committee Secretariat Sask.:—Dept. of Industry and Commerce Treasury Dept. Alta.:—Dept. of Industry and Tourism B.C.:—Dept. of Industrial Development, Trade, and Commerce, Economics and Statistics Branch
pt. of Regional Economic Expansion nk of Canada ntral Mortgage and Housing Corporation mpany of Young Canadians pt. of Agriculture Economics Branch pt. of Consumer and Corporate Affairs Bureau of Consumer Affairs pt. of Energy, Mines and Resources Mineral Resources Branch Policy and Planning Branch pt. of Finance Economic Analysis, Fiscal Policy and International Finance Branch pt. of Fisheries and Forestry Economics Service Forest Economics Research Institute pt. of Indian Affairs and Northern Development Policy, Planning and Programming Northern Economic Development Branch pt. of Industry, Trade and Commerce Office of Economics	ECONOMIC AND SOCIAL RESEARCH	Nfld.:—Dept. of Community and Social Development P.E.I.:—Planning and Development Board Dept. of Economic Development N.S.:—Dept. of Trade and Industry Nova Scotia Research Foundation N.B.:—Dept. of Finance Que.:—Dept. of Industry and Commerce, Economic Studies Branch, Bureau of Statistics Planning Bureau Ont.:—Dept. of Treasury and Economics Dept. of Trade and Development Dept. of Agriculture and Food, Farm Economics and Statistics Branch Dept. of Municipal Affairs, Community Planning Branch Alcoholism and Drug Addiction Research Foundation of Ontario

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Labour Economics and Research Branch Public Relations and Information Services Dept. of Manpower and Immigration Program Development Service Dept. of National Health and Welfare Research and Statistics Directorate Dept. of Secretary of State Citizenship Branch (social research and adult education services) Dept. of Transport Transportation Policy and Research Branch Fisheries Research Board of Canada Information Canada, Publishing (agent for UNESCO and OECD publications) Public Archives (early data) Dominion Bureau of Statistics	ECONOMIC AND SOCIAL RESEARCH—*concl.*	Man.:—Dept. of Industry and Commerce, Economic Business and Transportation Research Branch Dept. of Agricultuie, Economics Division Sask.—Dept. of Industry and Commerce Dept. of Co-operation and Co-operative Development Alta.:—Human Resources Development Authority B.C.:—Dept. of Industrial Development, Trade, and Commerce Economics and Statistics Branch
Dominion Bureau of Statistics Canada Council Canadian Broadcasting Corporation (educational broadcasts) Canadian Radio-Television Commission Central Mortgage and Housing Corporation Information Division Company of Young Canadians Dept. of Finance (Canada Student Loans Act) Dept. of Fisheries and Forestry Information and Consumer Branch Dept. of Indian Affairs and Northern Development Education Branch (Social Affairs Program) Dept. of Manpower and Immigration Programs Branch Dept. of National Defence Director of Education (service dependants' schools) Dept. of National Health and Welfare Dept. of Secretary of State Citizenship Branch (educational travel and exchange programs) Education Support Branch Dept. of Veterans Affairs (veterans and children of war dead) Information Canada, Publishing (agent for UNESCO publications) National Capital Commission Information Services National Museums of Canada Education and Extension Branch (school talks, publications, lectures, films)	EDUCATION *See also* "Film Production and Libraries" *and* "Photographic Material"	All Provinces except Man.:— Depts. of Education (technical, visual, audio and all other phases of education) Man.:—Dept. of Youth and Education *Additional:*—Alta.:—Dept. of Labour, Apprenticeship Board B.C.:—Dept. of Labour, Apprenticeship and Industrial Training Branch
Chief Electoral Office Library of Parliament Office of the Representation Commissioner Public Archives	ELECTIONS	Nfld.:—Dept. of Provincial Affairs P.E.I., N.S., N.B., Ont.:—Depts. of Provincial Secretary Que.:—Chief Returning Officer Man., B.C.:—Chief Electoral Officers Sask.:—Electoral Office Executive Council Alta.:—Clerk of the Executive Council
Dept. of Energy, Mines and Resources Energy Development Group National Energy Board	ELECTRIC POWER	Nfld.:—Newfoundland and Labrador Power Commission P.E.I.:—Public Utility Commission N.S., Alta.:—Power Commissions N.B.:—New Brunswick Electric Power Commission Que:—Hydro-Electric Commission Dept. of Natural Resources

Sources for Federal Data	Subject	Sources for Provincial Data
tional Research Council Radio and Electrical Engineering Division rthern Canada Power Commission tional Film Board minion Bureau of Statistics	ELECTRIC POWER—*concl.*	**Ont.:**—Dept. of Energy and Resources Management The Hydro-Electric Power Commission of Ontario **Man.:**—Manitoba Hydro Winnipeg City Hydro **Sask.:**—Saskatchewan Power Corporation **B.C.:**—British Columbia Hydro and Power Authority
pt. of Labour Economics and Research Branch Public Relations and Information Services pt. of Manpower and Immigration Canada Manpower Centres ormation Canada, Publishing (agent for ILO publications) blic Service Commission (staffing the public service) minion Bureau of Statistics	EMPLOYMENT	**Nfld., N.S., N.B., Man., Sask., Alta.:**—Depts. of Labour **P.E.I.:**—Dept. of Labour, Industry and Commerce Civil Service Commission **Que.:**—Dept. of Labour and Manpower, Manpower Centres Bureau of Statistics **Ont.:**—Dept. of Treasury and Economics Dept. of Labour Dept. of Civil Service **B.C.:**—Dept. of Labour Dept. of Industrial Development, Trade, and Commerce, Economics and Statistics Branch
pt. of Indian Affairs and Northern Development ndian-Eskimo Bureau Northern Science Research Division pt. of National Health and Welfare (health and hospital services) tional Museums of Canada tional Film Board	ESKIMOS	**Nfld.:**—Dept. of Labrador Affairs Dept. of Public Welfare **Que.:**—Dept. of Natural Resources, New Quebec Branch
ormation Canada ntral Mortgage and Housing Corporation (housing exhibits) pt. of Agriculture Livestock Division pt. of Energy, Mines and Resources Public Relations and Information Services pt. of Fisheries and Forestry nformation and Consumer Branch pt. of Indian Affairs and Northern Development Public Information Adviser pt. of Industry, Trade and Commerce Fairs and Missions Branch Publicity Branch pt. of Labour Public Relations and Information Services pt. of Manpower and Immigration nformation Service pt. of National Defence Directorate of Exhibitions and Displays pt. of National Health and Welfare nformation Division pt. of Public Works nformation Services tional Capital Commission tional Library tional Museums of Canada National Gallery of Canada Museum of Natural Sciences Museum of Man Museum of Science and Technology tional Film Board	EXHIBITIONS	**Nfld.:**—Dept. of Mines, Agriculture, and Resources **P.E.I.:**—Dept. of Agriculture and Forestry **N.S., N.B.:**—Depts. of Agriculture **Que.:**—Dept. of Agriculture and Colonization Dept. of Cultural Affairs Dept. of Industry and Commerce Dept. of Intergovernmental Affairs **Ont.:**—Most Ontario Departments organize exhibitions **Man.:**—Dept. of Agriculture, Extension Service Dept. of Industry and Commerce **Sask.:**—Dept. of Agriculture Dept. of Industry and Commerce **Alta.:**—Dept. of Agriculture Alberta Government Publicity Bureau **B.C.:**—Dept. of Agriculture Dept. of Industrial Development, Trade, and Commerce

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Industry, Trade and Commerce Trade Commissioner Service Fairs and Missions Branch Publicity Branch	EXPORT PROMOTION	**P.E.I.:**—Dept. of Labour, Indust and Commerce **Que.:**—Dept. of Industry and Co merce **Ont.:**—Dept. of Trade and Develo ment **Man.:**—Dept. of Industry and Co merce, Manitoba Export C poration **Sask.:**—Dept. of Industry and Co merce **Alta.:**—Dept. of Industry and To ism, Industrial Developme Branch **B.C.:**—Dept. of Industrial Develo ment, Trade, and Commer Economics and Statistics Bran
Dept. of External Affairs Information Division Canadian International Development Agency Dept. of Labour International Labour Affairs Branch (ILO; OECD) Dept. of National Health and Welfare International Health International Welfare, Research and Statistics Information Canada, Publishing (agent for international organizations publications)	EXTERNAL AFFAIRS *See also* "Trade"	**N.S.:**—Dept. of Trade and Indust **Que.:**—Dept. of Intergovernment Affairs
Dept. of National Health and Welfare (including assistance to families entering Canada not yet eligible for family allowances)	FAMILY AND YOUTH ALLOWANCES	**Nfld.:**—Dept. of Education (Paren subsidy) **N.S.:**—Dept. of Public Welfare **Que.:**—Dept. of Family and Soci Welfare
Dept. of Agriculture Production and Marketing Branch Plant Research Institute Dept. of Industry, Trade and Commerce Agriculture and Fisheries Branch Information Canada, Publishing (agent for FAO publications) National Research Council Prairie Regional Laboratory, Saskatoon, Sask. (utilization of crops and crop products) Dominion Bureau of Statistics	FIELD CROPS	**Nfld.:**—Dept. of Mines, Agricultur and Resources **P.E.I., N.S., N.B.:**—Depts. of Ag culture **Que.:**—Dept. of Agriculture ar Colonization Dept. of Industry and Commerc Bureau of Statistics **Ont.:**—Dept. of Agriculture ar Food **Man.:**—Dept. of Agriculture, Soi and Crops Branch **Sask.:**—Dept. of Agriculture, Pla Industry Branch **Alta.:**—Dept. of Agriculture, Pla Industry Division **B.C.:**—Dept. of Agriculture, Fie Crops Branch
National Film Board *(Produces documentary films and short subjects for theatrical, non-theatrical and television distribution; filmstrips, slides. Production available to the public through local and provincial film libraries, NFB regional libraries and several district offices.)* Canadian Broadcasting Corporation Canadian Film Development Corporation (to foster and promote the development of a feature film industry in Canada) Canadian Radio-Television Commission Central Mortgage and Housing Corporation (library of films on housing and urban renewal)	FILM PRODUCTION AND LIBRARIES	**Nfld., P.E.I., N.B.:**—Purchase film but do not produce them **N.S., Que., Alta., B.C.:**—Produc educational or information films **Ont.:**—Dept. of Tourism and Info mation, Theatres Branch ar Photography Branch (*Films a available to the public fr several other departments.*)

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Fisheries and Forestry Information and Consumer Branch (lending library of forestry training and resource films) Dept. of Industry, Trade and Commerce Publicity Branch (lending library of industrial and trade promotion films) Dept. of Labour Public Relations and Information Services (maintains National Industrial Relations Film Library, distributed by National Film Board) Dept. of National Health and Welfare Information Services National Capital Commission Information Services National Museums of Canada National Gallery of Canada (library of films on art) National Science Film Library (administered by the Canadian Film Institute, 2000 films on world scientific developments)	**FILM PRODUCTION and LIBRARIES** —*concluded*	**Man.:**—Dept. of Youth and Education Dept. of Agriculture **Sask.:**—Dept. of Industry and Commerce Dept. of Education, Visual Education Branch **Alta.:**—Dept. of Industry and Tourism, Film and Photographic Branch **B.C.:**—Dept. of Recreation and Conservation (*All provinces have Motion Picture Censorship Boards. Details available from: Depts. of Education and Travel, Provincial Censorship Boards and National Film Board Regional Offices.*)
Dept. of Finance Bank of Canada Information Canada, Publishing (agent for GATT publications) Treasury Board Dominion Bureau of Statistics	**FINANCE** *See also* "Taxation"	**Nfld., P.E.I., N.B., Man., B.C.:**—Depts. of Finance **N.S.:**—Dept. of Finance and Economics **Que.:**—Dept. of Finance Dept. of Industry and Commerce, Bureau of Statistics **Ont.:**—Dept. of Revenue **Sask.:**—Treasury Dept. **Alta.:**—Dept. of Provincial Secretary
Dept. of Fisheries and Forestry Information and Consumer Branch (forest fire prevention and forest products fire retardants) Canadian Transport Commission Railway Committee (forest fire protection along railway lines) Dept. of Indian Affairs and Northern Development National and Historic Parks Branch Northern Economic Development Branch Yukon and Mackenzie Forest Services Dept. of Public Works Dominion Fire Commissioner National Research Council Fire Research Section National Film Board	**FIRE PREVENTION**	**All Provinces:**—Provincial Fire Marshals (for urban and rural fire losses) **Nfld.:**—Dept. of Mines, Agriculture, and Resources **P.E.I.:**—Dept. of Community Services **N.S.:**—Dept. of Labour **N.B.:**—Dept. of Natural Resources Dept. of Attorney General **Que.:**—Dept. of Lands and Forests, Forest Protection Service Dept. of Municipal Affairs, Fire Commissioner **Ont.:**—Dept. of Lands and Forests, Forest Protection Branch Dept. of Public Works, Fire Prevention Officer Dept. of Attorney General, Office of the Fire Marshal **Man.:**—Dept. of Mines and Natural Resources, Forestry Branch Dept. of Labour, Fire Prevention Division **Sask.:**—Dept. of Natural Resources Dept. of Labour, Fire Commissioner **Alta.:**—Dept. of Lands and Forests Dept. of Provincial Secretary **B.C.:**—Dept. of Lands, Forests and Water Resources

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Fisheries and Forestry Information and Consumer Branch Dept. of Finance (Fisheries Improvement Loans Act) Dept. of Indian Affairs and Northern Development Canadian Wildlife Service Indian-Eskimo Economic Development Branch (Indian and Eskimo programs) Dept. of Industry, Trade and Commerce Agriculture, Fisheries and Food Branch Dept. of Veterans Affairs (veterans settled as commercial fishermen) Fisheries Research Board of Canada Information Canada, Publishing (agent for FAO publications) National Museums of Canada Unemployment Insurance Commission (insurance for fishermen) National Film Board Dominion Bureau of Statistics	FISHERIES	**Nfld., P.E.I., N.S., N.B.:**—Depts. of Fisheries **Que.:**—Dept. of Tourism, Game and Fish Dept. of Industry and Commerce, Bureau of Statistics, Fisheries Branch **Ont.:**—Dept. of Lands and Forests, Fish and Wildlife Branch **Man.:**—Dept. of Mines and Natural Resources, Fisheries Branch **Sask.:**—Dept. of Natural Resources, Fisheries Branch **Alta.:**—Dept. of Lands and Forests, Fish and Wildlife Branch **B.C.:**—Dept. of Recreation and Conservation Dept. of Industrial Development, Trade, and Commerce, Economics and Statistics Branch
Dept. of National Health and Welfare, Food and Drug Laboratory (for standards and methods of control of quality, purity and safety of food and drugs) Dept. of Agriculture (buying, using, and standards for fresh and processed agricultural products) Information Division Food Advisory Services Dept. of Consumer and Corporate Affairs Patent and Copyright Office (licensing of patents) Bureau of Consumer Affairs (economic aspects of labelling and advertising food) Dept. of Fisheries and Forestry (standards for fish products) Dept. of Industry, Trade and Commerce Agriculture, Fisheries and Food Branch Materials Branch Information Canada, Publishing (agent for FAO and WHO publications) National Film Board	FOOD AND DRUGS *See also* "Nutrition"	**All Provinces:**—Depts. of Health (sanitary inspection of food supplies)
	FOREIGN AFFAIRS See "External Affairs"	
Dept. of Fisheries and Forestry Information and Consumer Branch Dept. of Industry, Trade and Commerce Wood Products Branch Materials Branch Information Canada, Publishing (agent for FAO publications) National Film Board Dominion Bureau of Statistics	FOREST RESOURCES AND INDUSTRIES	**Nfld.:**—Dept. of Mines, Agriculture and Resources **P.E.I.:**—Dept. of Agriculture and Forestry **N.S., Ont., Alta.:**—Depts. of Lands and Forests **Que.:**—Dept. of Lands and Forests Dept. of Industry and Commerce, Bureau of Statistics **N.B.:**—Dept. of Natural Resources **Man.:**—Dept. of Mines and Natural Resources, Forestry Branch **Sask.:**—Dept. of Natural Resources, Forestry Branch Dept. of Industry and Commerce Saskatchewan Timber Board **B.C.:**—Dept. of Lands, Forests and Water Resources Dept. of Industrial Development, Trade, and Commerce, Economics and Statistics Branch

Sources for Federal Data	Subject	Sources for Provincial Data
	FUEL See "Coal", "Oil and Natural Gas" and "Electric Power"	
Dept. of Agriculture Production and Marketing Branch, Livestock Division Dept. of Indian Affairs and Northern Development Indian-Eskimo Economic Development Branch Dominion Bureau of Statistics	FUR FARMING See also "Trapping"	**Nfld.**:—Dept. of Mines, Agriculture and Resources Dept. of Economic Development **P.E.I.**:—Dept. of Agriculture and Forestry **N.S., N.B., Alta., B.C.**:—Depts. of Agriculture **Que.**:—Dept. of Agriculture and Colonization Dept. of Industry and Commerce, Bureau of Statistics **Ont.**:—Dept. of Lands and Forests **Man.**:—Dept. of Mines and Natural Resources, Wildlife Branch **Sask.**:—Dept. of Natural Resources Saskatchewan Fur Marketing Service
Dept. of Energy, Mines and Resources Public Relations and Information Services Dept. of Agriculture Soils Research Institute Fisheries Research Board of Canada (oceanography) National Library (books) Public Archives (maps; history of cartography) National Film Board	GEOGRAPHY	**Nfld.**:—Dept. of Mines, Agriculture and Resources **P.E.I.**:—Travel Bureau **N.S.**:—Dept. of Mines **N.B.**:—Dept. of Natural Resources **Que.**:—Dept. of Lands and Forests Dept. of Industry and Commerce, Drafting Division Dept. of Natural Resources Northern Studies Centre, Université Laval **Ont.**:—Dept. of Lands and Forests, Lands and Surveys Branch Dept. of Mines Ontario Agricultural College **Man.**:—Dept. of Mines and Natural Resources **Sask.**:—Dept. of Natural Resources Dept. of Industry and Commerce **Alta.**:—Dept. of Lands and Forests University of Alberta **B.C.**:—Dept. of Lands, Forests and Water Resources
Dept. of Energy, Mines and Resources Geological Survey of Canada National Museums of Canada National Film Board	GEOLOGY	**Nfld.**:—Dept. of Mines, Agriculture and Resources **P.E.I.**:—Dept. of Labour, Industry and Commerce **N.S.**:—Dept. of Mines **N.B.**:—Dept. of Natural Resources **Que.**:—Dept. of Natural Resources, Geological Surveys Branch **Ont.**:—Dept. of Mines, Geological Branch **Man.**:—Dept. of Mines and Natural Resources, Mines Branch **Sask.**:—Dept. of Mineral Resources **Alta.**:—Dept. of Mines and Minerals University of Alberta **B.C.**:—Dept. of Mines and Petroleum Resources

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of the Secretary of State (federal-provincial channel of communication) Chief Electoral Office (Electoral Act and voters lists) Dept. of Indian Affairs and Northern Development (Y.T. and N.W.T.) Public Information Adviser Information Canada, Publishing (Daily Checklist of Government Publications and distribution and sale of statutory orders and regulations) Library of Parliament Privy Council Office (appointments, orders in council, statutory orders and regulations) Public Archives (early official records) Public Service Commission (staffing the public service) National Film Board	GOVERNMENT *For* Senate and House of Commons of Canada *see* "Parliament"	**Nfld.:**—Dept. of Provincial Affairs **P.E.I., N.S., N.B., Ont., Man., B.C.:**—Depts. of Provincial Secretary **Que.:**—Dept. of Intergovernmental Affairs National Assembly **Sask., Alta.:**—Depts. of Provincial Secretary Executive Councils
Dept. of National Health and Welfare Information Canada, Publishing (agent for WHO publications) National Film Board Dominion Bureau of Statistics	HEALTH AND MEDICAL INSURANCE	**Nfld.:**—Dept. of Health, Medical Care Commission **P.E.I., Ont.:**—Depts. of Health **N.S.:**—Dept. of Public Health, Medical Care Insurance Commission **N.B.:**—Dept. of Health and Welfare **Que.:**—Dept. of Health, Quebec Health Services **Man.:**—Dept. of Health and Social Development Medical Services Insurance Corporation **Sask.:**—Dept. of Public Health Saskatchewan Medical Care Commission Saskatchewan Cancer Commission **Alta.:**—Dept. of Health **B.C.:**—Dept. of Health Services and Hospital Insurance, Medical Services Commission
Public Archives National Library Dept. of Indian Affairs and Northern Development Indian-Eskimo Bureau National and Historic Parks Branch Government of the Northwest Territories (Yellowknife, N.W.T.) Dept. of National Defence Directorate of History National Museums of Canada Dept. of Transport Marine Services Historian Dept. of Veterans Affairs (war memorials and war cemeteries) National Capital Commission Information Services National Film Board Dominion Bureau of Statistics	HISTORY	**Nfld.:**—Legislative Library Memorial University Gosling Memorial Library Dept. of Provincial Affairs, Public Archives and Museum **P.E.I.:**—Executive Council Secretariat **N.S.:**—Public Archives, Legislative Library **N.B.:**—Dept. of Education Legislative Library **Que.:**—National Assembly Library Dept. of Cultural Affairs, Quebec Archives, National Library of Quebec **Ont.:**—Legislative Library Dept. of Tourism and Information, Historical Branch Dept. of Public Records and Archives **Man.:**—Provincial Library and Archives **Sask.:**—Legislative Library Saskatchewan Archives Board **Alta.:**—Dept. of Provincial Secretary, Provincial Library, Provincial Museum and Archives **B.C.:**—Dept. of Provincial Secretary, Provincial Librarian and Archivist

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Agriculture Production and Marketing Branch (grading and inspection) Fruit and Vegetable Division Plant Products Division Plant Protection Division Research Branch Plant Research Institute Information Canada, Publishing (agent for FAO publications)	HORTICULTURE	**Nfld.**:—Dept. of Mines, Agriculture and Resources **P.E.I.**:—Dept. of Agriculture **N.S., N.B., Man., B.C.**:—Depts. of Agriculture, Horticultural Branches **Que.**:—Dept. of Agriculture and Colonization, Horticultural Branch **Ont.**:—Dept. of Agriculture and Food **Sask.**:—Dept. of Agriculture, Plant Industry Branch **Alta.**:—Dept. of Agriculture, Plant Industry Division
Dept. of National Health and Welfare Dept. of National Defence Office of the Surgeon General Dept. of Veterans Affairs (veterans hospitals) Information Canada, Publishing (agent for WHO publications) Dominion Bureau of Statistics	HOSPITALS AND HOSPITAL INSURANCE	**Nfld.**:—Dept. of Health **P.E.I., Ont.**:—Hospital Services Commissions **N.S.**:—Hospital Insurance Commission **N.B.**:—Dept. of Health and Welfare **Que.**:—Hospital Insurance Service **Man.**:—Manitoba Hospital Commission, Manitoba Medical Services Insurance Corporation **Sask., Alta.**:—Depts. of Public Health **B.C.**:—Dept. of Health Services and Hospital Insurance
	HOUSE OF COMMONS *See* "Parliament"	
Central Mortgage and Housing Corporation (National Housing Act financing: loans and subsidies for housing) Dept. of Indian Affairs and Northern Development Community Affairs Branch Technical Services Branch Dept. of Veterans Affairs (home construction assistance for veterans) National Research Council Division of Building Research (construction materials, building codes and practices, soil and snow mechanics, housing standards) National Film Board Dominion Bureau of Statistics	HOUSING	**Nfld.**:—Newfoundland and Labrador Housing Corporation **P.E.I.**:—Prince Edward Island Housing Authority **N.S.**:—Nova Scotia Housing Commission **N.B.**:—New Brunswick Housing Corporation **Que.**:—Quebec Housing Corporation **Ont.**:—Ontario Housing Corporation **Man.**:—Manitoba Housing and Renewal Corporation **Sask.**:—Dept. of Municipal Affairs, Housing and Urban Renewal Branch **Alta.**:—Alberta Housing and Urban Renewal Corporation **B.C.**:—Dept. of Municipal Affairs, Director of Housing and Urban Renewal
Dept. of Manpower and Immigration Canada Immigration Division Dept. of National Health and Welfare Quarantine, Immigration Medical and Sick Mariners Division Family Allowances, Youth Allowances, Old Age Security Division Dominion Bureau of Statistics	IMMIGRATION	**P.E.I.**:—Dept. of Labour, Industry and Commerce **Que.**:—Dept. of Immigration **Ont.**:—Dept. of Trade and Development, Immigration Branch **Man.**:—Dept. of Industry and Commerce **Sask.**:—Dept. of Labour Executive Council **Alta.**:—Dept. of Labour **B.C.**:—British Columbia House, London, England, and San Francisco and Los Angeles, California

Sources for Federal Data	Subject	Sources for Provincial Data
	INCOME TAX See "Taxation"	
Dept. of Consumer and Corporate Affairs Corporations Branch	INCORPORATION OF COMPANIES AND ASSOCIATIONS	Nfld.:—Dept. of Justice, Registry of Justice P.E.I., N.S., N.B., Ont., Sask., Alta.:—Depts. of Provincial Secretary Que.:—Dept. of Financial Institutions, Companies and Co-operatives Man.:—Dept. of Consumer and Corporate Affairs, Companies and Business Names Registration Branch B.C.:—Attorney General's Dept. Registrar of Companies
Dept. of Indian Affairs and Northern Development Public Information Adviser Dept. of National Health and Welfare (health, hospital services, and welfare) National Museums of Canada National Film Board	INDIANS	Nfld.:—Dept. of Social Services and Rehabilitation (Indians in Labrador) Dept. of Labrador Affairs P.E.I.:—Executive Council Secretariat Que.:—Dept. of Natural Resources New Quebec Branch Ont.:—Dept. of Social and Family Services Man.:—Dept. of Health and Social Development, Director of Social Services Sask.:—Saskatchewan Indian and Metis Department Alta.:—Human Resources Development Authority B.C.:—Provincial Secretary, Director, Indian Advisory Act
Dept. of Industry, Trade and Commerce National Design Council Canada Council Dept. of Consumer and Corporate Affairs Patent and Copyright Office National Film Board	INDUSTRIAL DESIGN	P.E.I.:—Dept. of Labour, Industry and Commerce Que.:—Dept. of Industry and Commerce Ont.:—Dept. of Trade and Development Man.:—Dept. of Industry and Commerce, Manitoba Design Institute
Dept. of Labour Accident Prevention and Compensation Branch Atomic Energy Control Board Dept. of Energy, Mines and Resources Mines Branch Dept. of National Health and Welfare National Film Board	INDUSTRIAL SAFETY	All Provinces:—Depts. of Labour or Workmen's Compensation Boards
Dept. of Insurance (Canadian, British and foreign companies and fraternal benefit societies, Public Service Insurance) Central Mortgage and Housing Corporation (insures loans made under National Housing Act) Dept. of Agriculture (crop insurance) Dept. of Industry, Trade and Commerce Export Development Corporation Dept. of Labour Industrial Pensions and Annuities Branch Dept. of National Health and Welfare Canada Pension Plan Dept. of Veterans Affairs Veterans Welfare Services Dominion Bureau of Statistics (summary statistics of many types of insurance)	INSURANCE—LIFE, FIRE, ETC. For Unemployment Insurance see "Labour" and for Hospital Insurance "Hospitals and Hospital Insurance"	Nfld.:—Dept. of Provincial Affairs P.E.I., N.S., N.B., B.C.:—Superintendents of Insurance Que.:—Finance Dept., Insurance Branch Ont.:—Dept. of Financial and Commercial Affairs, Superintendent of Insurance Man.:—Superintendent of Insurance Manitoba Crop Insurance Corporation Sask.:—Provincial Secretary Saskatchewan Government Insurance Office Alta.:—Dept. of Provincial Secretary, Supervisor of Insurance

Sources for Federal Data	Subject	Sources for Provincial Data
ept. of Energy, Mines and Resources Mines Branch Mineral Resources Branch ept. of Industry, Trade and Commerce Office of Economics Materials Branch ational Film Board ominion Bureau of Statistics	IRON AND STEEL	Nfld.: Dept. of Mines, Agriculture and Resources N.S.:—Dept. of Mines Research Foundation N.B.:—Dept. of Natural Resources Que.:—Dept. of Industry and Commerce, Bureau of Statistics Dept. of Natural Resources Ont.:—Dept. of Trade and Development, Trade and Industry Branch Man.:—Dept. of Industry and Commerce Sask.:—Dept. of Mineral Resources Dept. of Industry and Commerce Alta.:—Dept. of Mines and Minerals Dept. of Industry and Tourism Research Council of Alberta B.C.:—Dept. of Mines and Petroleum Resources Dept. of Industrial Development, Trade, and Commerce, Economics and Statistics Branch
ept. of Justice ept. of Indian Affairs and Northern Development (Y.T. and N.W.T.) formation Canada, Publishing (agent for International Court of Justice publications) ominion Bureau of Statistics	JUSTICE	All Provinces except Nfld., P.E.I., N.B. and Que.:—Depts. of Attorney General Nfld., N.B., Que.:—Depts. of Justice P.E.I.:—Dept. of Justice and Attorney General
ept. of Labour Canada Labour Relations Board Conciliation and Arbitration Branch (conciliation of labour disputes) Economics and Research Branch Employee Representation Branch (certification of bargaining agents) Fair Employment Practices Branch (promotion of fair employment practices) nternational Labour Affairs Branch Labour-Management Consultation Branch (promotion of labour management co-operation) Labour Standards Branch Legislative Research Branch Library Services Branch Public Relations and Information Services Women's Bureau mpany of Young Canadians ot. of Indian Affairs and Northern Development (Y.T. and N.W.T.) Personnel Adviser ot. of National Health and Welfare (occupational health) ormation Canada, Publishing (agent for International Labour Office publications) tional Research Council Division of Administration and Personnel (recruitment and salary levels of scientific and technical personnel) easury Board (the Federal Public Service) mployment Insurance Commission tional Film Board minion Bureau of Statistics	LABOUR, WAGES AND WORKING CONDITIONS	Nfld., N.S., N.B., Man., Sask., Alta.:—Depts. of Labour P.E.I.:—Dept. of Labour, Industry and Commerce Que.:—Dept. of Labour and Manpower Dept. of Industry and Commerce, Bureau of Statistics Ont.:—Dept. of Labour Dept. of Treasury and Economics B.C.:—Dept. of Labour Dept. of Industrial Development, Trade, and Commerce, Economics and Statistics Branch

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Energy, Mines and Resources Surveys and Mapping Branch Dept. of Agriculture Economics Branch Dept. of Indian Affairs and Northern Development Indian Reserve Lands Economic Development Dept. of Veterans Affairs Veterans Land Administration Public Archives (early data *re* settlement)	LANDS AND LAND SETTLEMENT	**Nfld.:**—Dept. of Mines, Agriculture and Resources **P.E.I.:**—Dept. of Agriculture and Forestry **N.S.:**—Dept. of Agriculture, Nova Scotia Farm Loan Board **N.B.:**—Dept. of Natural Resources **Que.:**—Dept. of Lands and Forests Dept. of Agriculture and Colonization **Ont., Alta.:**—Depts. of Lands and Forests **Man.:**—Dept. of Mines and Natural Resources, Lands Branch **Sask.:**—Dept. of Agriculture, Lands Branch Attorney General, Land Titles **B.C.:**—Dept. of Lands, Forests, and Water Resources
Dept. of Solicitor General Royal Canadian Mounted Police (*Enforces Federal Statutes in all parts of Canada; in the provinces, exclusive of Quebec and Ontario, it carries out, under contract, enforcement of the Criminal Code and Provincial Statutes and polices a number of municipalities; is the only law-enforcement body in the Y.T. and N.W.T.*)	LAW ENFORCEMENT	**All Provinces except Nfld., P.E.I. and Que.:**—Depts. of Attorney General **Nfld., Que.:**—Depts. of Justice **P.E.I.:**—Dept. of Justice and Attorney General
Library of Parliament Dept. of Justice Information Canada, Publishing (Daily Checklist of Government Publications, distribution and sale of the Statutes of Canada and texts of federal legislation) Privy Council Office	LEGISLATION *For* Statutory Orders and Regulations see "Government"	**All Provinces except Nfld., P.E.I., Man., and B.C.:**—Depts. of Attorney General *Additional:*—**N.S., Ont. and Alta.:**—Queen's Printer (distribution and sale of the Statutes and various Acts) **Nfld.:**—Dept. of Justice **P.E.I., B.C.:**—Depts. of Provincial Secretary **Man.:**—Legislative Council **Sask.:**—Executive Council
	LIBRARIES See "Bibliography"	
Chief Electoral Office (for local referendum under Canada Temperance Act) Dept. of Indian Affairs and Northern Development Indian-Eskimo Bureau Dominion Bureau of Statistics	LIQUOR CONTROL	**Nfld.:**—Board of Liquor Control **P.E.I., Man.:**—Liquor Control Commissions **N.S.:**—Liquor Commission, Liquor Licence Board **N.B., Ont., Alta., B.C.:**—Liquor Control Boards **Que.:**—Liquor Board **Sask.:**—Liquor Board, Liquor Licensing Commission
Dept. of Agriculture Production and Marketing Branch Livestock Division Health of Animals Branch Contagious Diseases Division Meat Inspection Division Animal Pathology Division Research Branch Animal Research Institute Information Canada, Publishing (agent for FAO publications) National Film Board Dominion Bureau of Statistics	LIVESTOCK	**Nfld.:**—Dept. of Mines, Agriculture and Resources **P.E.I.:**—Dept. of Agriculture and Forestry **N.S.:**—Dept. of Agriculture, Animal Husbandry Branch **N.B., Alta., B.C.:**—Depts. of Agriculture, Livestock Branches **Que.:**—Dept. of Agriculture and Colonization, Animal Products Branch Dept. of Industry and Commerce, Bureau of Statistics **Ont.:**—Dept. of Agriculture and Food, Livestock Branch **Man., Sask.:**—Depts. of Agriculture, Animal Industry Branch

Sources for Federal Data	Subject	Sources for Provincial Data
ept. of Industry, Trade and Commerce Information and Promotion Branch Office of the Design Adviser Office of the Industrial Policy Adviser nk of Canada Industrial Development Bank ept. of Consumer and Corporate Affairs Corporations Branch ept. of Finance (Small Businesses Loans Act) ational Research Council Canadian Patents and Development Limited (utilization of new scientific processes) Technical Information Service (answering queries from industry on problems of technology and productivity) ational Film Board ominion Bureau of Statistics	MANUFACTURING *See also* "Crown Corporations"	**Nfld.**:—Dept. of Community and Social Development **P.E.I.**:—Dept. of Labour, Industry and Commerce **N.S.**:—Dept. of Trade and Industry **N.B.**:—Dept. of Economic Growth **Que.**:—Dept. of Industry and Commerce, Bureau of Statistics **Ont.**:—Dept. of Trade and Development, Trade and Industry Division **Man., Sask.**:—Depts. of Industry and Commerce **Alta.**:—Dept. of Industry and Tourism Alberta Bureau of Statistics **B.C.**:—Dept. of Industrial Development, Trade, and Commerce, Economics and Statistics Branch
ept. of Energy, Mines and Resources Surveys and Mapping Branch Marine Sciences Branch Geological Survey Earth Physics Branch ept. of Agriculture (soil survey and economic survey maps) ept. of Fisheries and Forestry Information and Consumer Branch (fisheries and forestry maps) formation Canada, Publishing inistry of Transport (meteorological maps) ational Capital Commission (tourist and planning maps) ational Research Council Division of Building Research (Climatological Atlas) blic Archives (maps relating to history and cartography) ominion Bureau of Statistics (economic and census maps)	MAPS AND CHARTS	**Nfld.**:—Dept. of Mines, Agriculture and Resources **P.E.I.**:—Land Use Planning **N.S.**:—Dept. of Mines Research Foundation **N.B.**:—Dept. of Natural Resources Dept. of Economic Growth **Que.**:—Dept. of Lands and Forests Dept. of Natural Resources Dept. of Industry and Commerce, Economic Cartography Dept. of Agriculture and Colonization, Planning Branch **Ont.**:—Dept. of Mines Dept. of Lands and Forests Dept. of Highways Dept. of Tourism and Information **Man.**:—Dept. of Mines and Natural Resources, Surveys Branch **Sask.**:—Dept. of Natural Resources Dept. of Industry and Commerce **Alta.**:—Dept. of Lands and Forests Alberta Travel Bureau Dept. of Highways, Surveys Branch **B.C.**:—Dept. of Lands, Forests, and Water Resources
	MARRIAGES See "Vital Statistics"	
ept. of Industry, Trade and Commerce Market Analysis Division Publicity Branch Industry, Trade and Traffic Services Branch ept. of Agriculture Production and Marketing Branch Economics Branch ept. of Consumer and Corporate Affairs Bureau of Consumer Affairs ominion Bureau of Statistics	MERCHANDISING	**P.E.I.**:—Dept. of Labour, Industry and Commerce **Ont.**:—Dept. of Trade and Development **Man., Sask.**:—Depts. of Industry and Commerce **Alta.**:—Dept. of Industry and Tourism **B.C.**:—Dept. of Industrial Development, Trade, and Commerce, Economics and Statistics Branch

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Energy, Mines and Resources Mines Branch Mineral Resources Branch Dept. of Industry, Trade and Commerce Materials Branch Office of Economics National Film Board Dominion Bureau of Statistics (for production data)	METALS *See also* "Iron and Steel"	**Nfld.**:—Dept. of Mines, Agricultu and Resources **N.S., Ont.**:—Depts. of Mines **N.B., Que.**:—Depts. of Natur Resources **Man.**:—Dept. of Mines and Natur Resources, Mines Branch **Sask.**:—Dept. of Mineral Resourc Dept. of Industry and Commerc **Alta.**:—Dept. of Mines and Minera **B.C.**:—Dept. of Industrial Develo ment, Trade, and Commerc Economics and Statistics Branc Dept. of Mines and Petroleu Resources
Dept. of Energy, Mines and Resources Geological Survey of Canada Mines Branch Mineral Resources Branch Dept. of Indian Affairs and Northern Development Northern Economic Development Branch Dept. of Industry, Trade and Commerce Materials Branch National Museums of Canada National Film Board Dominion Bureau of Statistics (for production data)	MINING AND MINERALS	**Nfld.**:—Dept. of Mines, Agricultu and Resources **P.E.I.**:—Dept. of Labour, Industr and Commerce **N.S., Ont.**:—Depts. of Mines **N.B., Que.**:—Depts. of Natur Resources **Man.**:—Dept. of Mines and Natur Resources, Mines Branch **Sask.**:—Dept. of Mineral Resourc **Alta.**:—Dept. of Mines and Minera **B.C.**:—Dept. of Mines and Petr leum Resources
Dominion Bureau of Statistics Governments Division Dept. of Finance (municipal grants) Dept. of Indian Affairs and Northern Development (Y.T. and N.W.T.) Community Affairs Branch	MUNICIPAL AFFAIRS	**Nfld.**:—Dept. of Municipal Affairs and Supply **P.E.I.**:—Dept. of Community Se vices **N.S., N.B., Ont., Man., Sask Alta., B.C.**:—Depts. of Mun cipal Affairs **Que.**:—Dept. of Municipal Affair Industry Branch Planning Bureau
National Museums of Canada Museum of Natural Sciences Museum of Man Museum of Science and Technology National Gallery of Canada (works of art) Dept. of Indian Affairs and Northern Development Public Information Adviser Information Canada, Publishing (agent for UNESCO publications) Public Archives (historical) Laurier House, Ottawa (historical)	MUSEUMS	**Nfld.**:—Dept. of Provincial Affairs **P.E.I.**:—Executive Council Secr tariat **N.S.**:—Nova Scotia Museum of Fin Arts, Public Archives of Nov Scotia, Provincial Museum Nova Scotia, Halifax **N.B.**:—New Brunswick Museum Saint John **Que.**:—Dept. of Cultural Affair Quebec Archives, Musée d Québec, Quebec Commerci and Industrial Museum of Mont real **Ont.**:—Royal Ontario Museum, A and Archaeology, Life Science and Earth Sciences Division Dept. of Public Records an Archives **Man.**:—Manitoba Museum of Ma and Nature **Sask.**:—Dept. of Natural Resources Museum of Natural History Regina Western Development Museum Saskatoon **Alta.**:—Dept. of Provincial Sec retary, Provincial Museum, Ed monton **B.C.**:—Provincial Museum of Nat ural History and Anthropology Provincial Archives (includin Helmcken House), Victoria Also provincial universities o Sask., Alta. and B.C.

Sources for Federal Data	Subject	Sources for Provincial Data
Dominion Bureau of Statistics	NATIONAL ACCOUNTS	Que.:—Dept. of Industry and Commerce, Bureau of Statistics
Ministry of Transport Marine Services (aids to marine navigation; secondary canals) Information Services Canadian Transport Commission Dept. of Communications (radio aids to navigation) Dept. of Energy, Mines and Resources Canadian Hydrographic Service Dept. of Public Works Information Services (dredging and marine construction) National Harbours Board National Research Council Radio and Electrical Engineering Division (applications of radar to navigation) Division of Mechanical Engineering (model-testing basin and hydraulic models) St. Lawrence Seaway Authority (St. Lawrence-Great Lakes canals)	NAVIGATION	
Dept. of National Health and Welfare Nutrition Division Information Canada, Publishing (agent for FAO and WHO publications) National Film Board	NUTRITION	Nfld., P.E.I., Que.:—Depts. of Health N.S.:—Dept. of Public Health, Nutrition Division N.B.:—Dept. of Health and Welfare Ont.:—Dept. of Health, Nutrition Service Dept. of Agriculture and Food, Home Economics Service Man.:—Dept. of Health and Social Development, Health Education Services Sask.:—Dept. of Public Health Alta.:—Dept. of Agriculture Dept. of Public Health B.C.:—Dept. of Health Services and Hospital Insurance
Dept. of Manpower and Immigration Canada Manpower Centres	OCCUPATIONAL TRAINING	N.S.:—Dept. of Education Dept. of Labour Man.:—Dept. of Youth and Education B.C.:—Dept. of Labour
Dept. of Energy, Mines and Resources Marine Sciences Branch Dept. of Fisheries and Forestry Dept. of Industry, Trade and Commerce Aerospace, Marine and Rail Branch Dept. of National Defence Defence Research Board Fisheries Research Board of Canada National Museums of Canada	OCEANOGRAPHY	Nfld.:—Dept. of Mines, Agriculture and Resources P.E.I.:—Dept. of Fisheries Que.:—Dept. of Industry and Commerce Maine Biological Station of Grande Rivière Fisheries Training School B.C.:—Institute of Oceanography, University of British Columbia

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Energy, Mines and Resources Energy Development Group Geological Survey of Canada Mines Branch Dept. of Indian Affairs and Northern Development Indian-Eskimo Economic Development Branch Dept. of Industry, Trade and Commerce Chemicals Branch Materials Branch National Energy Board National Film Board Dominion Bureau of Statistics	OIL AND NATURAL GAS	**Nfld.**:—Dept. of Mines, Agriculture and Resources **P.E.I.**:—Dept. of Labour, Industry and Commerce **N.S.**:—Dept. of Mines **N.B.**:—Dept. of Natural Resources **Que.**:—Electricity and Gas Board **Ont.**:—Dept. of Energy and Resources Management **Man.**:—Dept. of Mines and Natural Resources, Mines Branch **Sask.**:—Dept. of Mineral Resources Saskatchewan Power Corporation Dept. of Industry and Commerce **Alta.**:—Dept. of Mines and Minerals, Oil and Gas Conservation Board, Calgary or Edmonton Alberta Bureau of Statistics **B.C.**:—Dept. of Mines and Petroleum Resources
Dept. of National Health and Welfare Dept. of Veterans Affairs (veterans only)	OLD AGE ASSISTANCE *See also* "Veterans Affairs"	**Nfld.**:—Dept. of Social Services and Rehabilitation **P.E.I., Sask.**:—Depts. of Welfare **N.S.**:—Dept. of Public Welfare **N.B.**:—Dept. of Health and Welfare **Que.**:—Dept. of Family and Social Welfare, Social Allowances Commission **Ont.**:—Dept. of Social and Family Services, Family Benefits Branch **Man.**:—Dept. of Health and Social Development **Alta.**:—Dept. of Social Development **B.C.**:—Dept. of Rehabilitation and Social Improvement **Y.T.**:—Dept. of Welfare (Director) **N.W.T.**:—Dept. of Social Development (Director)
Dept. of National Health and Welfare	OLD AGE SECURITY AND GUARANTEED INCOME SUPPLEMENT	
Dept. of Indian Affairs and Northern Development National and Historic Parks Branch Dept. of Public Works Information Services (highway construction and development) Dept. of Regional Economic Expansion (land use projects under ARDA) National Capital Commission (urban parks and Gatineau Park) National Film Board	PARKS	**Nfld.**:—Dept. of Mines, Agriculture and Resources **P.E.I.**:—Dept. of Tourist Development **N.S., Alta.**:—Depts. of Lands and Forests **N.B.**:—Dept. of Natural Resources **Que.**:—Dept. of Tourism, Game and Fish **Ont.**:—Dept. of Tourism and Information Dept. of Highways Dept. of Lands and Forests, Parks Branch Dept. of Energy and Resources Management, Conservation Branch **Man.**:—Dept. of Tourism and Recreation, Parks Branch **Sask.**:—Dept. of Natural Resources Dept. of Industry and Commerce **B.C.**:—Dept. of Recreation and Conservation

Sources for Federal Data	Subject	Sources for Provincial Data
ibrary of Parliament iformation Canada, Publishing (Daily Checklist of Government Publications) ffice of the President of the Privy Council ational Film Board	PARLIAMENT	**Nfld.:**—Dept. of Provincial Affairs **P.E.I., N.B., Sask., Alta., B.C.:**—Legislative Assemblies **N.S.:**—House of Assembly **Que.:**—National Assembly **Ont.:**—Legislative Assembly Clerk of the Legislative Assembly **Man.:**—Legislative Council
ept. of External Affairs Passport Division	PASSPORTS	
ept. of Consumer and Corporate Affairs Patent and Copyright Office Trade Marks Office anadian Patents and Development Limited (licences available on patents from Government laboratories, etc.) ational Library (handles all copyright books)	PATENTS, COPYRIGHTS AND TRADE MARKS	
ept. of National Health and Welfare Canada Pension Plan Research and Statistics Directorate anadian Pension Commission (pensions to or in respect of veterans) ept. of Insurance (Pension Benefits Standards Act) ept. of National Revenue ept. of Supply and Services Superannuation Division ominion Bureau of Statistics (private pension plan statistics)	PENSIONS	**Nfld., P.E.I., N.S., N.B., Man., B.C.:**—Legislation governing private pension plans **Que.:**—Quebec Pension Board **Ont.:**—Ontario Pension Commission **Sask.:**—Dept. of Labour Superintendent of Pensions **Alta.:**—Superintendent of Pensions
ational Film Board ntral Mortgage and Housing Corporation Information Division ept. of Energy, Mines and Resources Public Relations and Information Services Mineral Economics Division National Air Photographic Library ept. of Fisheries and Forestry Information and Consumer Branch ept. of Indian Affairs and Northern Development Public Information Adviser ept. of Industry, Trade and Commerce Office of Tourism ept. of National Health and Welfare Information Services formation Canada (still photo library and sales) ational Capital Commission Information Services (related to the development of the National Capital and the National Capital Region) ational Museums of Canada blic Archives (historical)	PHOTOGRAPHIC MATERIAL *See also* "Film Production and Libraries" *and* "Tourist Trade"	**Nfld.:**—Dept. of Community and Social Development **P.E.I.:**—Dept. of Tourist Development **N.S.:**—Dept. of Trade and Industry **Que.:**—Dept. of Communications, Radio Quebec Dept. of Cultural Affairs, Film Bureau **Man.:**—Dept. of Government Services **Sask.:**—Dept. of Industry and Commerce **Alta.:**—Dept. of Industry and Tourism, Film and Photographic Branch **B.C.:**—Dept. of Travel Industry, Photographic Branch (*Photographs are available from many provincial government departments in all provinces.*)

Sources for Federal Data	Subject	Sources for Provincial Data
Dominion Bureau of Statistics (for all census and estimated population statistics) Dept. of Indian Affairs and Northern Development Operations Branch National Capital Commission (National Capital Region statistics) Public Archives (early census and settlement records)	POPULATION	**Nfld.**:—Dept. of Health **P.E.I.**:—Dept. of Labour, Industry and Commerce **N.S.**:—Dept. of Public Health, Vital Statistics Branch **N.B.**:—Dept. of Health, Vital Statistics Branch **Que.**:—Dept. of Health, Vital Statistics Branch Dept. of Industry and Commerce, Bureau of Statistics **Ont.**:—Dept. of Treasury and Economics **Man.**:—Dept. of Industry and Commerce **Sask.**:—Dept. of Public Health, Vital Statistics Division Legislative Library **Alta.**:—Dept. of Industry and Tourism, Provincial Statistician **B.C.**:—Dept. of Industrial Development, Trade, and Commerce, Economics and Statistics Branch
Post Office Department Public Affairs Branch	POSTAL SERVICE	
Dept. of Agriculture Production and Marketing Branch Poultry Division Health of Animals Branch Contagious Diseases Division Meat Inspection Division Animal Pathology Division Research Branch Animal Research Institute Dept. of Industry, Trade and Commerce Agriculture, Fisheries and Food Branch Information Canada, Publishing (agent for FAO publications) Dominion Bureau of Statistics	POULTRY	**Nfld.**:—Dept. of Mines, Agriculture and Resources **P.E.I.**:—Dept. of Agriculture and Forestry **N.S.**:—Dept. of Agriculture **N.B., Alta.**:—Depts. of Agriculture, Poultry Branches **Que.**:—Dept. of Agriculture and Colonization, Animal Production Service Dept. of Industry and Commerce, Bureau of Statistics **Ont.**:—Ontario Agricultural College (Guelph), Poultry Division **Man.**:—Dept. of Agriculture, Animal Industry Branch **Sask.**:—Dept. of Agriculture, Animal Industry Branch **B.C.**:—Dept. of Agriculture, Poultry Division
Dept. of Secretary of State State Ceremonial and Protocol	PRECEDENCE AND CEREMONIAL	**Nfld.**:—Dept. of Provincial Affairs **P.E.I., N.S., N.B., Ont., B.C.**:—Depts. of Provincial Secretary **Que.**:—Executive Council, Chief of Protocol **Man., Alta.**:—Clerk of the Executive Council
Dominion Bureau of Statistics Dept. of Agriculture Production and Marketing Branch Markets Information Agricultural Stabilization Board Fisheries Prices Support Board Information Canada, Publishing (agent for GATT publications)	PRICES	**Que.**:—Dept. of Industry and Commerce, Bureau of Statistics **Ont.**:—Dept. of Treasury and Economics **Man., Sask.**:—Depts. of Industry and Commerce **B.C.**:—Dept. of Industrial Development, Trade, and Commerce, Economics and Statistics Branch

Sources for Federal Data	Subject	Sources for Provincial Data
pt. of Consumer and Corporate Affairs Registration Branch ormation Canada, Publishing (Daily Checklist of Government Publications) blic Archives (early records)	PUBLIC DOCUMENTS (Commissions of Appointment, Proclamations, Land Grants, etc.)	**Nfld.:**—Dept. of Provincial Affairs Dept. of Mines, Agriculture and Resources **P.E.I., N.S., N.B., Ont., Man., Sask., Alta., B.C.:**—Depts. of Provincial Secretary **Que.:**—Quebec Official Publisher Dept. of Financial Institutions, Companies and Co-operatives
pt. of Energy, Mines and Resources Energy Development Group minion Bureau of Statistics	PUBLIC UTILITIES *See also* "Electric Power"	**Nfld.:**—Board of Public Utilities Commissioners **P.E.I., B.C.:**—Public Utilities Commissions **N.S., N.B.:**—Boards of Commissioners Public Utilities **Que.:**—Public Service Board Quebec Hydro-Electric Commission **Ont.:**—Dept. of Energy and Resources Management The Hydro-Electric Power Commission of Ontario Ontario Telephone Service Commission Ontario Water Resources Commission Ontario Municipal Board **Man.:**—The Public Utilities Board **Sask.:**—Government Finance Office Saskatchewan Telecommunications Saskatchewan Power Corporation **Alta.:**—Dept. of Municipal Affairs, Public Utilities Board
pt. of Public Works nformation Services pt. of Labour Labour Standards Branch (wages, hours, vacations, general holidays) Public Relations and Information Services nistry of Transport Marine and Air Lawrence Seaway Authority	PUBLIC WORKS	**All Provinces except P.E.I. and Man.:**—Depts. of Public Works **P.E.I.:**—Dept. of Public Works and Highways *Additional:*—**Ont.:**—The Hydro-Electric Power Commission of Ontario Ontario Water Resources Commission **Man.:**—Dept. of Government Services
ormation Canada, Publishing (publications issued by Parliament and Government Departments and Agencies)	PUBLICATIONS	**Nfld., P.E.I., N.B., Man., B.C.:**—Queen's Printer **Que.:**—Quebec Official Publisher **Ont.:**—Queen's Printer and Publisher **Sask.:**—Saskatchewan Government Printing Company
pt. of Indian Affairs and Northern Development ublic Information Services National and Historic Parks Branch pt. of National Health and Welfare itness and Amateur Sport Directorate ional Capital Commission nformation Services ional Film Board	RECREATION *See also* "Health"	**Nfld.:**—Dept. of Education and Youth Dept. of Mines, Agriculture and Resources **P.E.I.:**—Dept. of Education **N.S.:**—Youth Commission Dept. of Trade and Industry **N.B.:**—Dept. of Youth Dept. of Natural Resources, Travel Bureau **Que.:**—Dept. of Tourism, Game and Fish **Ont.:**—Dept. of Tourism and Information **Man.:**—Dept. of Tourism and Recreation **Sask.:**—Dept. of Industry and Commerce, Tourist Development Branch Provincial Youth Agency **Alta.:**—Dept. of Youth, Recreation Branch **B.C.:**—Dept. of Recreation and Conservation

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Veterans Affairs (veterans) Dept. of Indian Affairs and Northern Development Education Branch Dept. of Manpower and Immigration Dept. of National Health and Welfare Dept. of Solicitor General Canadian Penitentiary Service National Parole Board National Film Board	REHABILITATION (of persons)	**Nfld.**:—Dept. of Health, Provinci Co-ordinator of Rehabilitation **P.E.I.**:—Dept. of Welfare **N.S.**:—Dept. of Public Welfar Provincial Rehabilitation Co ordinator **N.B.**:—Dept. of Health and Welfar Director and Co-ordinator Rehabilitation **Que.**:—Dept. of Family and Soci Welfare Dept. of Education, Service for th Vocational Rehabilitation of th Handicapped Dept. of Labour and Manpowe Workmen's Compensation Com mission Dept. of Health **Ont.**:—Dept. of Social and Famil Services Dept. of Health, Rehabilitatio Division Dept. of Correctional Services **Man.**:—Dept. of Health and Socia Development **Sask.**:—Dept. of Welfare, Provinci Co-ordinator of Rehabilitation **Alta.**:—Dept. of Social Development Provincial Co-ordinator of Re habilitation **B.C.**:—Dept. of Rehabilitation an Social Improvement
Dept. of Energy, Mines and Resources Energy Development Group Mineral Resources Branch Policy and Planning Branch Dept. of Fisheries and Forestry Information and Consumer Branch Resource Development Service Dept. of Indian Affairs and Northern Development Northern Economic Development Branch Dept. of Industry, Trade and Commerce Publicity Branch Dept. of Regional Economic Expansion Fisheries Research Board of Canada Information Canada, Publishing (agency for OECD publications) Northern Canada Power Commission National Film Board	RESOURCE DEVELOPMENT	**Nfld.**:—Dept. of Community an Social Development Dept. of Mines, Agriculture an Resources **P.E.I.**:—Dept. of Labour, Industr and Commerce **N.S.**:—Dept. of Trade and Industr **N.B.**:—Dept. of Economic Growth **Que.**:—Depts. of Lands and Forests Labour, Roads, Family an Social Welfare, Natural Resour ces, and Industry and Commerc **Ont.**:—Dept. of Treasury and Eco nomics Dept. of Energy and Resources Management Dept. of Lands and Forests Ontario - St. Lawrence Develop ment Commission Dept. of Municipal Affairs, Com munity Planning Branch Ontario Northland Transportatio Commission, North Bay **Man.**:—Dept. of Mines and Natura Resources Dept. of Industry and Commerc **Sask.**:—Dept. of Industry an Commerce Dept. of Mineral Resources Dept. of Natural Resources **Alta.**:—Dept. of Industry an Tourism **B.C.**:—Dept. of Industrial Develop ment, Trade, and Commerce Economics and Statistics Branch
National Research Council Laboratory Divisions (biology, biochemistry and molecular biology, building research, pure and applied chemistry, mechanical engineering, aeronautical research, pure and applied physics, radio and electrical engineering) Regional Laboratories at Saskatoon, Sask., and Halifax, N.S.	SCIENTIFIC RESEARCH *See also* "Atomic Energy"	

Sources for Federal Data	Subject	Sources for Provincial Data
ence Council of Canada ence Secretariat, Privy Council Office omic Energy of Canada Limited, Chalk River, Ont. nadian Patents and Development Limited (licences available on patents derived from government research, etc.) nadian Transport Commission Research Division pt. of Agriculture Research Branch (basic and applied research on all aspects of agriculture) Health of Animals Branch (animal and poultry diseases) Board of Grain Commissioners (cereal grains and oilseed crops) Economics Branch (farm income, marketing, land use, costs of production, etc.) pt. of Energy, Mines and Resources Geological Survey of Canada Mines Branch Earth Physics Branch Marine Sciences Branch nland Waters Branch pt. of Fisheries and Forestry nformation and Consumer Branch pt. of Indian Affairs and Northern Development National and Historic Parks Branch Northern Science Research Group Canadian Wildlife Service pt. of Industry, Trade and Commerce Office of Science and Technology pt. of National Defence Defence Research Board pt. of National Health and Welfare pt. of Public Works Testing Laboratories nformation Services pt. of Veterans Affairs (medical research) heries Research Board of Canada ormation Canada, Publishing (agency for International Atomic Energy Agency publications) dical Research Council (fellowships, associateships and grants-in-aid) nistry of Transport (aviation, radio, meteorology, navigation) tional Museums of Canada National Museum of Natural Sciences (zoology, botany, oceanography, mineral sciences, palaeontology) National Museum of Man (ethnology, archaeology, folk culture, history, military history) National Gallery of Canada (conservation research laboratory) tional Film Board minion Bureau of Statistics	SCIENTIFIC RESEARCH —*concluded*	**Nfld.**:—Dept. of Community and Social Development **P.E.I.**:—Dept. of Labour, Industry and Commerce **N.S.**:—Nova Scotia Research Foundation **N.B.**:—Dept. of Finance and Industry **Que.**:—Industrial Research Centre Dept. of Agriculture and Colonization Dept. of Natural Resources Dept. of Health Dept. of Roads **Ont.**:—Ontario Research Foundation Dept. of Agriculture and Food Dept. of Lands and Forests Alcoholism and Drug Addiction Research Foundation of Ontario The Hydro-Electric Power Commission of Ontario Sheridan Park Research Community **Man.**:—Manitoba Research Council **Sask.**:—Saskatchewan Research Council **Alta.**:—Alberta Research Council **B.C.**:—Dept. of Industrial Development, Trade, and Commerce B.C. Research Council

SENATE
See "Parliament"

Sources for Federal Data	Subject	Sources for Provincial Data
	SOCIAL SECURITY *See* "Family and Youth Allowances" "Blindness Allowances" "Old Age Assistance" "Old Age Security and Guaranteed Income Supplement" "Disabled Persons Allowances" "Labour" "Pensions" "Unemployment" "Veterans Affairs" "Economic and Social Research"	
	SOCIAL WELFARE *See* "Welfare"	
Dept. of Consumer and Corporate Affairs Standards Branch (for inquiries on electricity and gas inspection, weights and measures, precious metals marking, commodity standards and national trade mark and true labelling matters) Canadian Radio-Television Commission Central Mortgage and Housing Corporation (building standards) Dept. of Industry, Trade and Commerce Office of Science and Technology Dept. of Labour Labour Standards Branch (wages, hours, vacations, general holidays) Public Relations and Information Services Dept. of National Defence Dept. of Public Works Testing Laboratories Dept. of Supply and Services Specifications and Standards Branch Ministry of Transport (standards in steamship inspection) National Research Council Physics Division (fundamental physical and electrical standards and Time Service of Canada) Division of Building Research	STANDARDS AND SPECIFICATIONS *See also* "Food and Drugs"	**Que.:**—Dept. of Industry and Commerce, Standards Bureau **Ont.:**—Dept. of Labour Ontario Research Foundation Ontario Housing Corporation **Man., Sask., Alta.:**—Depts. of Labour

Sources for Federal Data	Subject	Sources for Provincial Data
ominion Bureau of Statistics nk of Canada ntral Mortgage and Housing Corporation pt. of Labour Economic and Research Branch Public Relations and Information Services pt. of National Health and Welfare Research and Statistics Directorate ormation Canada, Publishing (agent for United Nations publications)	STATISTICS	**Nfld.:**—Dept. of Provincial Affairs Dept. of Community and Social Development **P.E.I.:**—Dept. of Labour, Industry and Commerce **N.S.:**—Dept. of Trade and Industry **N.B.:**—Dept. of Education Dept. of Health and Welfare **Que.:**—Dept. of Industry and Commerce, Bureau of Statistics **Ont.:**—Dept. of Treasury and Economics Dept. of Trade and Development **Man.:**—Dept. of Industry and Commerce, Economic, Business and Transportation Research **Sask.:**—Dept. of Industry and Commerce Treasury Dept. **Alta.:**—Dept. of Industry and Tourism, Bureau of Statistics Dept. of Public Health, Vital Statistics **B.C.:**—Dept. of Industrial Development, Trade, and Commerce, Economics and Statistics Branch
pt. of National Revenue, Taxation (income tax and estate tax statistics and information) pt. of National Revenue, Customs and Excise (customs duty, excise duty, excise tax and sales tax) pt. of Finance (taxation policy, tariff policy, Budget papers and statistics)	TAXATION	**Nfld., P.E.I., Que., Man.:**—Depts. of Finance **N.S.:**—Dept. of Finance and Economics **N.B.:**—Dept. of Provincial Secretary Dept. of Finance **Ont.:**—Dept. of Revenue **Sask.:**—Provincial Treasury Dept. **Alta:**—Provincial Treasurer's Dept. Dept. of Municipal Affairs **B.C.:**—Dept. of Finance, Surveyor of Taxes
pt. of Energy, Mines and Resources Topographical Survey tional Research Council Physics Division (photogrammetric research)	TOPOGRAPHY	**Nfld.:**—Dept. of Mines, Agriculture and Resources **P.E.I.:**—Land Use Planning **N.S.:**—Dept. of Mines Nova Scotia Research Foundation **N.B., Sask.:**—Depts. of Natural Resources **Que.:**—Dept. of Lands and Forests Dept. of Industry and Commerce, Drafting Division Dept. of Natural Resources **Ont.:**—Dept. of Lands and Forests, Lands and Surveys Branch **Man.:**—Dept. of Mines and Natural Resources, Surveys Branch **Alta.:**—Dept. of Lands and Forests **B.C.:**—Dept. of Lands, Forests, and Water Resources
pt. of Industry, Trade and Commerce Office of Tourism pt. of Indian Affairs and Northern Development Public Information Adviser ormation Canada Expositions Division (displays) tional Capital Commission nformation Services tional Gallery of Canada tional Film Board minion Bureau of Statistics	TOURIST TRADE	**Nfld.:**—Dept. of Community and Social Development, Tourist Development Division **P.E.I.:**—Dept. of Tourist Development **N.S.:**—Dept. of Trade and Industry, Travel Bureau **N.B.:**—Dept. of Natural Resources, Travel Bureau **Que.:**—Dept. of Tourism, Game and Fish **Ont.:**—Dept. of Tourism and Information **Man.:**—Dept. of Tourism and Recreation **Sask.:**—Dept. of Industry and Commerce, Tourist Development Branch **Alta.:**—Dept. of Industry and Tourism, Alberta Travel Bureau **B.C.:**—Dept. of Recreation and Conservation Dept. of Travel Industry

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Industry, Trade and Commerce Publicity Branch Export Development Corporation Materials Branch Dept. of Consumer and Corporate Affairs Information and Public Relations Dept. of Finance Tariffs, Trade and Aid Branch Dept. of Fisheries and Forestry Information and Consumer Service Information Canada, Publishing (agent for OECD and GATT publications) Expositions Division (displays) National Film Board Dominion Bureau of Statistics	TRADE	For incorporation of companies under provincial law, address Provincial Secretaries for P.E.I., N.S., N.B., Ont., Sask. and Alta. Nfld.:—Dept. of Justice P.E.I.:—Dept. of Labour, Industry and Commerce N.S.:—Dept. of Trade and Industry N.B.:—Dept. of Economic Growth Que.:—Dept. of Industry and Commerce Dept. of Financial Institutions, Companies and Co-operatives Ont.:—Dept. of Trade and Development, Trade and Industry Division Treasury Dept., Finance and Economics Division Man.:—Dept. of Industry and Commerce, Manitoba Export Corporation Dept. of Consumer and Corporate Affairs Sask.:—Dept. of Industry and Commerce, Area and Trade Development Alta.:—Dept. of Industry and Tourism B.C.:—Dept. of Industrial Development, Trade, and Commerce, Economic Statistics Branch Dept. of Attorney General
Dept. of Manpower and Immigration Canada Manpower Centres Company of Young Canadians Public Service Commission Bureau of Staff Development and Training Language Bureau	TRAINING	P.E.I.:—Dept. of Labour, Industry and Commerce Que.:—Dept. of Labour and Manpower Dept. of Education Man.:—Dept. of Youth and Education Sask.:—Dept. of Labour Dept. of Education Indian and Metis Department B.C.:—Dept. of Labour
Dept. of the Secretary of State Translation Bureau National Research Council National Science Library (information *re* location of completed scientific translations in Canada, other countries of the Commonwealth and the United States)	TRANSLATIONS	N.B.:—Dept. of Provincial Secretary Que.:—National Assembly Bureau for Translations and all departments of the Quebec administration
Ministry of Transport Information Services Air Canada Canadian National Railways Canadian Transport Commission (regulations *re* railways; highway crossings; rates of railways, express companies and certain inland water carriers; rates *re* communications, international bridges and tunnels; licences to certain inland carriers; commercial air services) Dept. of Indian Affairs and Northern Development Technical Services Branch National and Historic Parks Branch (highways in National Parks) Dept. of Industry, Trade and Commerce Aerospace, Marine and Rail Branch Publicity Branch Mechanical Transport Branch Dept. of Labour Conciliation and Arbitration Branch Economics and Research Branch Public Relations and Information Services	TRANSPORTATION	Nfld.:—Dept. of Highways P.E.I.:—Dept. of Labour, Industry and Commerce N.S.:—Dept. of Highways Board of Commissioners of Public Utilities N.B.:—Dept. of Highways Dept. of Provincial Secretary Que.:—Dept. of Transport Dept. of Roads Ont.:—Dept. of Transport Dept. of Highways Dept. of Treasury and Economics Ontario Northland Transportation Commission, North Bay Man.:—Dept. of Transportation Dept. of Industry and Commerce, Transportation Research Branch Sask.:—Dept. of Highways and Transportation, Highway Traffic Board

Sources for Federal Data	Subject	Sources for Provincial Data
ept. of Public Works Information Services (Trans-Canada Highway and Northwest Highway System) formation Canada, Publishing (agent for ICAO publications) ational Harbours Board ational Museums of Canada orthern Transportation Company Limited (Crown) . Lawrence Seaway Authority ational Film Board ominion Bureau of Statistics	TRANS-PORTATION—*concluded*	**Alta.:**—Dept. of Highways and Transport Highway Traffic Board Alberta Freight Bureau **B.C.:**—Dept. of Commercial Transport Dept. of Highways
ept. of Indian Affairs and Northern Development Indian-Eskimo Economic Development Branch ominion Bureau of Statistics	TRAPPING *See also* "Fur Farming"	**Nfld.:**—Dept. of Mines, Agriculture and Resources **P.E.I.:**—Dept. of Labour, Industry and Commerce **N.S., Ont., Alta.:**—Depts. of Lands and Forests **N.B.**—Dept. of Natural Resources **Que.:**—Dept. of Tourism, Game and Fish **Man.:**—Dept. of Mines and Natural Resources, Wildlife Branch **Sask.:**—Dept. of Natural Resources Fur Marketing Service **B.C.:**—Dept. of Recreation and Conservation
ept. of Labour Economics and Research Branch formation Canada, Publishing (agent for ILO publications) nemployment Insurance Commission ominion Bureau of Statistics	UNEM-PLOYMENT	**Nfld., N.S., Sask., Alta.:**—Depts. of Labour **P.E.I.:**—Dept. of Labour, Industry and Commerce **N.B.:**—Office of the Economic Adviser **Que.:**—Dept. of Labour and Manpower **Ont.:**—Dept. of Treasury and Economics **Man.:**—Dept. of Labour, Research Branch **B.C.:**—Dept. of Industrial Development, Trade, and Commerce, Economics and Statistics Branch Dept. of Labour
nemployment Insurance Commission ept. of Manpower and Immigration Canada Manpower Centres ept. of National Health and Welfare	UNEMPLOYMENT ASSISTANCE	**Nfld.:**—Dept. of Social Services and Rehabilitation **P.E.I., Sask.:**—Depts. of Welfare **N.S.:**—Dept. of Public Welfare **N.B.:**—Dept. of Health and Welfare **Que.:**—Dept. of Family and Social Welfare **Ont.:**—Dept. of Social and Family Services **Man.:**—Dept. of Health and Social Development **Alta.:**—Dept. of Social Development **B.C.:**—Dept. of Rehabilitation and Social Improvement **Y.T.:**—Dept. of Welfare (Director) **N.W.T.:**—Dept. of Social Development (Director)
ntral Mortgage and Housing Corporation mpany of Young Canadians ational Capital Commission	URBAN RENEWAL	**Nfld.:**—Dept. of Municipal Affairs and Supply **P.E.I.:**—Dept. of Community Services **N.S., Alta., B.C.:**—Depts. of Municipal Affairs **Que.:**—Dept. of Municipal Affairs, Housing Corporation of Quebec **Ont.:**—Ontario Housing Corporation **Man.:**—The Manitoba Housing and Renewal Corporation **Sask.:**—Dept. of Municipal Affairs, Housing and Urban Renewal Branch

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Veterans Affairs (general information, rehabilitation, welfare, allowances, training, treatment, land settlement, education of children of war dead, insurance, records of service, war graves, medals and remembrance ceremonies) Canadian Pension Commission (the Pension Act and Civilian War Pensions and Allowances Act, Parts I to X) Dept. of Indian Affairs and Northern Development. Dept. of Manpower and Immigration (civilian employment assistance) Dept. of National Health and Welfare Prosthetic Services War Veterans Allowance Board (the War Veterans Allowance Act and Civilian War Pensions and Allowances Act, Part XI)	VETERANS AFFAIRS	P.E.I.:—Dept. of Welfare N.S.:—Dept. of Public Welfare N.B.:—Dept. of Youth Que.:—Dept. of Family and Soci Welfare Ont.:—Dept. of Social and Famil Services, Soldiers Aid Commi sion Sask.:—Dept. of Welfare, Provinci Co-ordinator of Rehabilitatio B.C.:—Dept. of Provincial Secretar
Dominion Bureau of Statistics Dept. of Indian Affairs and Northern Development Operations Branch Dept. of Labour Economics and Research Branch (labour statistics) Public Archives (early census records)	VITAL STATISTICS	Nfld., N.B.:—Depts. of Health P.E.I.:—Dept. of Health, Directo of Vital Statistics N.S.:—Dept. of Public Health Registration Services Que.:—Dept. of Health Bureau of Statistics Ont.:—Dept. of Provincial Secretar and Citizenship, Office of th Registrar-General Man.:—Dept. of Health and Soci Development, Vital Statistic Division Sask.:—Dept. of Public Health Vital Statistics Division Alta.:—Dept. of Public Health Director of Vital Statistics B.C.:—Dept. of Health Services an Hospital Insurance, Vital Stat istics Division
Dept. of Energy, Mines and Resources Inland Waters Branch Policy and Planning Branch Dept. of Agriculture Dept. of Fisheries and Forestry Information and Consumer Branch Dept. of Public Works Information Services National Film Board	WATER RESOURCES	Nfld.:—Dept. of Mines, Agricultur and Resources P.E.I.:—Prince Edward Island Wa ter Authority N.S.:—Nova Scotia Water Resource Commission N.B.:—Dept. of Natural Resource Dept. of Municipal Affairs Que.:—Dept. of Natural Resources Ont.:—Ontario Water Resource Commission Dept. of Lands and Forests Man.:—Dept. of Mines and Natura Resources, Water Control Branch Sask.:—Saskatchewan Water Re sources Commission Dept. of Agriculture Saskatchewan Research Council Alta.:—Dept. of Agriculture B.C.:—Dept. of Lands, Forests and Water Resources
Dept. of National Health and Welfare Company of Young Canadians Dept. of Indian Affairs and Northern Development Community Affairs Branch National Advisory Committee on the Rehabilitation of Disabled Persons Unemployment Insurance Commission National Film Board Dominion Bureau of Statistics	WELFARE *For* Welfare of Veterans *see* "Veterans Affairs"	Nfld.:—Dept. of Social Services and Rehabilitation P.E.I., Sask.:—Depts. of Welfare N.S.:—Dept. of Public Welfare N.B.:—Dept. of Health and Welfare Que.:—Dept. of Family and Social Welfare Ont.:—Dept. of Social and Family Services Man.:—Dept. of Health and Social Development Alta.:—Dept. of Social Development B.C.:—Dept. of Rehabilitation and Social Improvement Y.T.:—Dept. of Welfare (Director) N.W.T.:—Dept. of Social Develop ment (Director)

Sources for Federal Data	Subject	Sources for Provincial Data
ept. of Indian Affairs and Northern Development Canadian Wildlife Service ommissioner of Yukon Territory, Whitehorse ept. of Fisheries and Forestry Information and Consumer Branch ational Capital Commission (Gatineau Park and Greenbelt) ational Museums of Canada ational Film Board	WILDLIFE	Nfld.:—Dept. of Mines, Agriculture and Resources P.E.I.:—Dept. of Tourist Development, Fish and Wildlife Division N.S., Ont., Alta.:—Depts. of Lands and Forests N.B.:—Dept. of Natural Resources Que.:—Dept. of Tourism, Game and Fish Man.:—Dept. of Mines and Natural Resources, Wildlife Branch Sask.:—Dept. of Natural Resources Wildlife Branch B.C.:—Dept. of Recreation and Conservation

PART II.—SPECIAL MATERIAL PUBLISHED IN FORMER EDITIONS OF THE CANADA YEAR BOOK

It is not possible to include in any single edition of the Year Book all articles and escriptive text of previous editions. Therefore the following list has been compiled as index to such miscellaneous material and special articles as are not repeated in the esent edition. This list links the Year Book with its predecessors in respect of matters at have not been subject to wide change. Those Sections of Chapters, such as "Popula-on", which are automatically revived when later census material is made available and which adequate references are made in the text, are not listed unless they are in the nature special contributions. The latest published article on each subject is shown, except hen an earlier article includes material not repeated in the later one. When an article vers more than one subject it is listed under each appropriate heading.

Subject and Article	Contributor	Edition	Page
riculture—			
Historical Background of Canadian Agriculture	G. S. H. Barton	1939	187–190
The Major Soil Zones and Regions of Canada	P. C. Stobbe	1951	352–356
The Board of Grain Commissioners	W. J. MacLeod	1960	957–958
The Canadian Wheat Board and its Role in Grain Marketing	C. B. Davidson	1960	958–960
Changes in Canadian Agriculture as Reflected by the Census of 1961	—	1963–64	409–415
Contribution of the Canada Department of Agriculture to Modern Agricultural Science	—	1966	457–461
Federal Assistance in Livestock Improvement	—	1967	453–457
nking and Finance—			
The Bank of Canada and its Relation to the Financial System	—	1937	881–885
Historical Sketch of Currency and Banking	—	1938	900–906
Wartime Control under the Foreign Exchange Control Board	R. H. Tarr	1941 1942	833–835 830–833
Commercial Banking in Canada	J. Douglas Gibson	1961	1115–1120
tizenship—			
Early Naturalization Procedure and Events Leading up to the Canadian Citizenship Act	—	1951	153–155

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Climate and Meteorology—			
Factors which Control Canadian Weather	Sir Frederick Stupart	1925	36–
Temperature and Precipitation of Northern Canada	A. J. Connor	1930	41–
Droughts in Western Canada	A. J. Connor	1933	47–
The Climate of Canada (textual material appears in the 1959 Year Book and the tabular data in the 1960 edition but the reprint includes both textual and tabular data)	C. C. Boughner and M. K. Thomas	1959 1960	23– 31–
The Climate of the Canadian Arctic	H. A. Thompson	1967	55–
Communications—			
The Democratic Functioning of the Press	W. A. Buchanan	1945	744–74
History and Development of the Canadian Broadcasting Corporation	Augustin Frigon	1947	737–74
A History of Canadian Journalism, 1752–(circa) 1900	W. H. Kesterton	1957–58	920–93
A History of Canadian Journalism (circa) 1900–1958	W. H. Kesterton	1959	883–90
The Development of Telecommunications in Canada	M. E. Callin	1967	862–86
Constitution and Government—			
Provincial and Local Government	—	1922–23	102–11
The Evolution of the Constitution of Canada down to Confederation	S. A. Cudmore and E. H. Coleman	1942	34–4
The British North America Act, 1867	—	1942	40–5
Canada's Growth in External Status	F. H. Soward	1945	74–7
The Constitutional Development of Newfoundland prior to Union with Canada, 1949	—	1950	85–9
The Terms of Union of Newfoundland with Canada, 1949	—	1951	56–5
The Privy Council Office and Cabinet Secretariat in Relation to the Development of Cabinet Government	W. E. D. Halliday	1956	62–7
Amendment of the Canadian Constitution	J. R. Mallory	1961	51–5
Yukon Territory and Northwest Territories (historical and current administration of)	—	1968	110–11
Crime and Delinquency—			
A Historical Sketch of Criminal Law and Procedure	R. E. Watts	1932	897–89
The Influence of the Royal Canadian Mounted Police in the Building of Canada	S. T. Wood	1950	317–33
Education—			
Report of the Royal Commission on National Development in the Arts, Letters and Sciences	—	1952–53	342–345
Recent Developments in Public Technical and Vocational Education in Canada	Phillip Cohen	1963–64	737–74
Fauna and Flora—			
Faunas of Canada	P. A. Taverner	1922–23	32–36
Faunas of Canada	R. M. Anderson	1937	29–52
Migratory Bird Protection in Canada	—	1951	38–45
The Barren-Ground Caribou	—	1954	33–36

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auna and Flora—concluded			
Migratory Bird Legislation	—	1955	41–45
The Musk-ox	—	1957–58	28–30
Provincial Government Wildlife Conservation Measures	—	1963–64	46–52
The Flora of Canada	Homer J. Scoggan	1966	35–61
Animal Life in Canada Today	Scientists of the Zoological Division, National Museum of Natural Sciences	1968	47–60
isheries—			
Groundfish Species in the Canadian Fisheries	T. H. Turner	1957–58	591–595
Canada's Commercial Fishery Resources and Their Conservation	—	1960	625–630
orestry—			
Physiography, Geology and Climate as Affecting the Forests	—	1934–35	311–313
The Pulp and Paper Industry in Canada	—	1952–53	467–475
The Federal-Provincial Forestry Agreements	H. W. Beall	1956	459–466
The Pulp and Paper Research Institute of Canada	Rielle Thomson	1957–58	489–491
Canadian Forest Products and Changing World Markets	J. T. B. Kingston	1965	511–517
ur Trade—			
The Development of Marshlands in Relation to Fur Production and the Rehabilitation of Fur-Bearers	D. J. Allan	1943–44	267–269
The Fur Industry	W. M. Ritchie	1961	618–622
Provincial Government Wildlife Conservation Measures	—	1963–64	46–52
eology—			
Geology in Relation to Agriculture	Wyatt Malcolm	1921	68–72
The Geological Survey of Canada	J. M. Harrison	1960	13–19
Geology and Economic Minerals of Canada	W. D. McCartney	1967	19–32
ealth and Welfare—			
Mental Health and Tuberculosis	B. R. Blishen and C. A. Roberts	1956	248–257
Hospital Services and Hospital Insurance in Canada	—	1960	281–290
Federal Food and Drug Legislation in Canada	C. A. Morrell	1961	242–248
istory—			
Canadian Chronology, 1497–1960	—	1951–60	...
Canadian Chronology, 1961–64 (updated annually in subsequent editions)	—	1962–65	...
abour—			
Recent Developments in Public Technical and Vocational Education in Canada	Phillip Cohen	1963–64	737–743
History of the Labour Movement in Canada	Eugene Forsey	1967	773–781
anufactures—			
Changes in Canadian Manufacturing Production from Peace to War, 1939–44	—	1945	364–381

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Manufactures—concluded			
Canadian Metallurgical Development	JOHN CONVEY	1961	513–522
Manufacturing Production during the Period 1945–59	A. COHEN	1962	600–609
The Petrochemical Industry in Canada	G. E. MCCORMACK	1962	609–615
Secondary Manufacturing in Canada	W. L. POSTHUMUS	1963–64	637–643
Manufacturing and the Changing Industrial Structure of the Canadian Economy, 1946–65	—	1967	665–678
Technology, Markets and Costs in Manufacturing	—	1968	689–694
Mining—			
Mining—A Historical Sketch	—	1939	309–310
The Coal Deposits and Coal Resources of Canada	B. R. MACKAY	1946	337–347
Canadian Crude Petroleum Situation	G. S. HUME	1952–53 1954	524–527 540–544
History of Pipeline Construction in Canada	G. S. HUME	1954	861–869
Canadian Metallurgical Development	JOHN CONVEY	1961	513–522
Geology and Economic Minerals of Canada	W. D. MCCARTNEY	1967	19–32
Fuels in Canada	A. IGNATIEFF	1969	637–645
Physiography and Related Sciences—			
Physical Geography of the Canadian Eastern Arctic	R. A. GIBSON	1945	12–19
Hydrographical Features	F. C. G. SMITH	1947	3–12
Physical Geography of the Canadian Western Arctic	R. A. GIBSON	1948–49	9–18
The Drainage Basins of Canada	—	1961	16–18
Economic Regions of Canada	N. L. NICHOLSON	1962	17–23
Main Physical and Economic Features of the Provinces and Territories	—	1963–64	4–20
Geophysics	G. S. GARLAND	1963–64	57–60
Federal Government Surveying and Mapping	MARY J. GIROUX	1965	17–24
Astronomy in Canada	IAN HALLIDAY	1965	47–55
Growth of Geographical Knowledge of Canada	TREVOR LLOYD	1967	1–6
Geology and Economic Minerals of Canada	W. D. MCCARTNEY	1967	19–32
Archaeology in Canada	SCIENTISTS OF THE NATIONAL MUSEUM OF MAN	1968	20–29
Population—			
Occupational Trends in Canada, 1891–1931	A. H. LENEVEU	1939	774–778
Developments in Canadian Immigration	—	1957–58	154–176
Integration of Postwar Immigrants	—	1959	176–178
Use of the English and French Languages in Canada	A. H. LENEVEU	1965	180–184
Mobility of Canada's Population, 1956–1961	(Miss) Y. KASAHARA	1966	179–187
Recent Trends in Urbanization and Metropolitan Growth	LEROY O. STONE AND FRANCES AUBRY	1969	156–165
Research—			
The International Geophysical Year	D. C. ROSE	1957–58	35–38
The Fisheries Research Board	J. L. KASK	1959	584–588
Geophysics	G. S. GARLAND	1963–64	57–60
The Fisheries Research Board of Canada	—	1963–64	612–614
Astronomy in Canada	IAN HALLIDAY	1965	47–55
A Selection of Canadian Achievements in Science and Technology, 1800–1964	JOHN R. KOHR	1965	398–401

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ade—			
anada's Participation in the Changing Pattern of World Trade, 1953–66	A. M. Coll	1967	953–966
anada's International Trade after the Kennedy Round of Trade Negotiations	G. A. Richardson	1968	946–954
anada's Trade with the European Economic Community	D. Paul Ojha	1969	977–985
nsportation—			
he Development of Aviation in Canada	J. A. Wilson	1938	710–712
re-War Civil Aviation and the Defence Program	J. A. Wilson	1941	608–612
nternational Civil Aviation Organization and Canada's Participation Therein	C. S. Booth	1952–53	820–827
anals of the St. Lawrence Waterway	—	1954	830–833
istory of the Canadian National Railways	—	1955	840–851
he St. Lawrence Seaway	—	1955	885–888
raffic on the Great Lakes – St. Lawrence Seaway	—	1956	821–829
he St. Lawrence Seaway in Operation	S. Judek	1960	851–860
evolution in Canadian Transportation	A. W. Currie	1962	753–758
perational and Technological Changes in Rail Transport	—	1965	755–761
n Outline of the Development of Civil Air Transport in Canada	J. R. K. Main	1967	838–843
he First Decade of the Seaway	Pierre Camu	1969	841–845

PART III.—REGISTER OF OFFICIAL APPOINTMENTS*

The following list includes official appointments for the period May 1, 1969 to Dec. 31, 0,† continuing the list published in the 1969 Year Book at pp. 1261-1268. Appointnts to the Governor General's staff, judicial appointments, appointments to advisory ncils and appointments of limited or local importance are not included.

Queen's Privy Council for Canada.—1969. *Oct. 20,* Herbert Eser Gray and Robert uglas George Stanbury: to be members. **1970.** *Mar. 23,* Rt. Hon. Joseph-Honoré-rald Fauteux: to be a member. *May 7,* Claude M. Isbister: to be Special Adviser, Privy uncil Office, from May 18, 1970. *Dec. 22,* Jean-Pierre Goyer: to be a member.

Lieutenant-Governors.—1969. *July 31,* J. George MacKay, Albany, P.E.I.: to be utenant-Governor of the Province of Prince Edward Island. *Dec. 22,* Stephen Woroz, Saskatoon: to be Lieutenant-Governor of the Province of Saskatchewan. **1970.** *y 3,* William John McKeag, Winnipeg: to be Lieutenant-Governor of the Province of nitoba. *Dec. 24,* Hon. Hugues Lapointe: to remain in office as Lieutenant-Governor the Province of Quebec after the completion of five years in office on Feb. 22, 1971.

Supreme Court of Canada.—1970. *Mar. 19,* Hon. Joseph-Honoré-Gérald Fauteux, e of the Puisne Judges: to be Chief Justice of Canada, *vice* Rt. Hon. John Robert Cartght, retired, from Mar. 23, 1970. Hon. Bora Laskin, a Judge of the Supreme Court of tario and a member of the Court of Appeal for Ontario: to be a Puisne Judge.

* Extracts from the *Canada Gazette*, with some additions. All academic and honorary degrees and military ours have been omitted.
† Appointments made immediately preceding this date but not yet gazetted are not included.

Cabinet Ministers.—1969. *May 5,* Hon. Donald Campbell Jamieson: to be Minister of Transport from May 5, 1969. Hon. James Armstrong Richardson: to be Minister of Supply and Services from May 5, 1969. *Oct. 20,* Herbert Eser Gray: to be a Minister without Portfolio. Robert Douglas George Stanbury: to be a Minister without Portfolio. **1970.** *Sept. 24,* Hon. Allan Joseph MacEachen: to be President of the Queen's Privy Council for Canada. Hon. Joseph Julien Jean-Pierre Côté: to be Minister without Portfolio. Hon. Donald Stovel Macdonald: to be Minister of National Defence. Hon. Otto Emil Lang: to be Minister of Manpower and Immigration. Hon. Herbert Eser Gray: to be Minister of National Revenue. *Dec. 22,* Hon. Jean-Pierre Goyer: to be Solicitor General of Canada from Dec. 22, 1970.

Senators.—1970. *Oct. 7,* Hon. Ernest C. Manning of Edmonton; Gildas L. Molgat of St. Vital, Man.; Mme Thérèse Casgrain of Montreal; Eugene A. Forsey of Ottawa; William C. McNamara of Winnipeg; Paul C. Lafond of Hull, Que.; Ann Elizabeth Haddon Heath of Nanaimo, B.C.; and Edward M. Lawson of Vancouver: to be Senators.

Deputy Ministers.—1969. *Dec. 19,* Jean Boucher: to be Deputy Minister of Supply from Jan. 1, 1970. John A. MacDonald, Deputy Minister of Indian Affairs and Northern Development: to be Deputy Minister of Public Works from Jan. 15, 1970, *vice* Lucien Lalonde, resigned. Sylvain Cloutier: to be Deputy Minister of National Revenue for Taxation from Mar. 1, 1970. Basil Robinson: to be Deputy Minister of Indian Affairs and Northern Development from Mar. 1, 1970. A. E. Ritchie: to be Under-Secretary of State for External Affairs from Jan. 31, 1970. **1970.** *Jan. 22,* J. Maurice LeClair: to be Deputy Minister of National Health and Welfare (Health) from Apr. 1, 1970. *Mar. 13,* Sol Simon Reisman: to be Deputy Minister of Finance from Apr. 1, 1970. *May 7,* Jacob Austin: to be Deputy Minister of Energy, Mines and Resources from May 18, 1970. *Aug. 12,* John A. H. Mackay: to be Deputy Postmaster General. *Nov. 27,* Paul-Maurice Ollivier, an Assistant Deputy Attorney General, Department of Justice: to be Associate Deputy Minister of Justice.

Diplomatic Appointments.—1969. The following diplomatic appointments were announced during the year. Gordon Edwin Cox: to be Canadian Ambassador to Thailand. Joseph Evremont Ghislain Hardy: to be Canadian Ambassador to Spain and concurrently to Morocco. Michel Gauvin: to be Canadian Ambassador to Portugal. Harry Havilland Carter: to be Canadian Ambassador to the Republic of South Africa. Charles James Woodsworth: to be Canadian Ambassador to Ethiopia and concurrently to the Malagasy Republic and the Somali Republic. Gordon George Riddell: to be Canadian Ambassador to Senegal and concurrently to Guinea, Mauritania and Mali. Blanche Margaret Meagher: to be Canadian Ambassador to Sweden. Christian Hardy: to be Canadian Ambassador to Brazil. Charles Eustace McGaughey: to be Canadian Ambassador to Israel. John Charles Small: to be Canadian Ambassador to Afghanistan. D'Iberville Fortier: to be Canadian Ambassador to Tunisia and concurrently to Libya. Gordon George Riddell: to be Canadian High Commissioner in Gambia. Gerald Anthony Rau: to be Canadian High Commissioner in Trinidad and Tobago, in Barbados, and in the West Indies (Associated States). Charles John Small: to be Canadian High Commissioner in Pakistan. James Murray Cook: to be Canadian High Commissioner in Kenya and in Uganda. Harry Havilland Carter: to be Canadian High Commissioner in Botswana, in Lesotho and in Swaziland. John Arnold Irwin: to be Canadian High Commissioner in Mauritius. Gordon Gale Crean: to be Canadian Ambassador to the Federal Republic of Germany. John Everett Robbins: to be Canadian Ambassador to the Holy See. Marcel Cadieux: to be Canadian Ambassador to the United States of America. Norman Frederick Henderson Berlis: to be Canadian Ambassador to the Republic of Austria. Frank Geoffrey Hooton: to be Canadian Ambassador to Finland. Georges Charpentier: to be Canadian Ambassador to Ivory Coast and concurrently to Niger and Upper Volta. Jacques Gignac: to be Canadian Ambassador to Lebanon and concurrently to Jordan and Syria. Charles Odilon Roger Rousseau: to be Canadian Ambassador to the Cameroon and concurrently to the Central

rican Republic, Chad and Gabon. Benjamin Rogers: to be Canadian Ambassador to ly. Benjamin Rogers: to be High Commissioner for Canada in Malta. Alfred Pike ssonnet: to be Canadian Ambassador to Argentina and concurrently to Paraguay and uguay. Pierre Charpentier: to be Canadian Ambassador to Peru and concurrently to livia. Sydney Allan Freifeld: to be Canadian Ambassador to Colombia and concurntly to Ecuador. Kenneth Charles Brown: to be Canadian Ambassador to Cuba. John Dougan: to be High Commissioner for Canada in New Zealand. John Alexander Stiles: be High Commissioner for Canada in Guyana. William Thomas Delworth: to be Cadian Ambassador to Indonesia. Donald S. McPhail: to be Canadian Ambassador to nezuela and concurrently to the Dominican Republic. Hon. Léo Cadieux: to be Canan Ambassador to France. Michel Gauvin: to be Canadian Ambassador to Greece. ul André Beaulieu: to be Canadian Ambassador to Portugal. Arthur Redpath Menzies, gh Commissioner for Canada in Australia: to be concurrently High Commissioner for nada in Fiji. Douglas Barcham Hicks: to be Canadian Ambassador to Dahomey. Kenth Charles Brown: to be Canadian Ambassador to Haiti. Ronald M. Macdonnell: to be gh Commissioner to Ceylon. Allan S. McGill: to be High Commissioner to Nigeria. René rneau: to be Canadian Ambassador and permanent delegate for Canada to UNESCO Paris, *vice* the late Graham McInnes. James C. Langley: to be Canadian Ambassador Belgium and concurrently to Luxembourg. James C. Langley: to be Head of the Mission of Canada to the European Communities.

National Defence Appointments.—1969. *Aug. 13,* Lieut.-Gen. F. R. Sharp: to be ief of the Defence Staff, with the rank of General, from Sept. 15, 1969, *vice* Gen. J. V. lard.

Air Canada.—1969. *Oct. 21,* J. R. Murray, Winnipeg, Man.: to be a Director for ree years, *vice* Roderick Hugh McIsaac, resigned. **1970.** *Feb. 5,* William R. Allen, ronto, Ont.: to be a Director until Oct. 1, 1972.

Anti-dumping Tribunal.—1970. *Apr. 9,* A. P. Mills: to be a member for seven ars. *July 8,* Miss S. G. Thomson: to be Secretary from May 11, 1970, *vice* C. D. Arthur.

Army Benevolent Fund Board.—1970. *Jan. 15,* H. M. Heckbert, Saint John, B.: to be a member for four years. *Feb. 19,* Jack C. Lundberg: to be again a member for ur years from Mar. 3, 1970.

Atlantic Development Council.—1969. *May 1,* W. Y. Smith, Fredericton, N.B.: be a member for three years from Apr. 1, 1969, and to be Chairman. *Oct. 30,* F. C. udson, Bedford, N.S.; Philip W. Oland, Rothesay, N.B.; Donald P. Wood, Kensington, E.I.; and C. R. Barrett, St. John's, Nfld.: to be members for three years, from Nov. 1, 69. John B. Foote, Grand Bank, Nfld.; Paul Le Page, Bathurst, N.B.; and J. J. Kindley, nenburg, N.S.: to be members for two years from Nov. 1, 1969. John W. MacDonald, ampbellton, N.B.; and John R. Lynk, New Glasgow, N.S.: to be members for one year m Nov. 1, 1969. *Nov. 7,* Calvert C. Pratt, St. John's, Nfld.: to be a member for one year.

Atomic Energy Control Board.—1970. *Feb. 19,* Donald G. Hurst, to be a member d President.

Bank of Canada.—1970. *Aug. 9,* Percy A. Archibald, Antigonish, N.S.: to be a irector for three years.

Board of Grain Commissioners for Canada.—1970. *Aug. 4,* Harold Delmar und, Calgary, Alta.: to be a Commissioner from Aug. 10, 1970, *vice* A. V. Svoboda.

Canada Council.—1969. *June 5,* John Prentice: to be Chairman for five years. uy Rocher: to be Vice-Chairman for five years. *July 31,* David Alexander Colville,

Sackville, N.B.; and J. Alexander Corry, Montreal, Que.: to be again members for thre years from July 15, 1969. *Dec. 19,* Peter Dwyer, Ottawa, Ont.: to be Director from Jan. 1 1970. **1970.** *Jan. 15,* Robert Élie: to be Associate Director. *Apr. 17,* Ronald Baker Charlottetown, P.E.I.; Jean-Charles Bonenfant, Quebec, Que.; Dora de Pedery Hunt Toronto, Ont.; John Godfrey, Toronto, Ont.; and Elizabeth Lane, Vancouver, B.C.: to b members for three years. *Apr. 30,* Brian Flemming, Halifax, N.S.: to be a member fo three years.

Canada Grains Council.—1969. *June 5,* Alexander McInnes Runciman and George Wright Peavey Heffelfinger, the younger: to be Chairman and Vice-Chairman, respectively.

Canada Labour Relations Board.—1969. *June 26,* Richard Clarence Smith, Vill St. Laurent, Que.: to be a member, as a representative of employees, *vice* Archie Balch

Canada Manpower and Immigration Council.—1969. *May 16,* Jean-Réa Cardin; Jacques Villeneuve; Mrs. R. D. Jennings; and Edward D. Brown: to be member for one year from Apr. 1, 1969. William Hamilton, W. H. Wightman, Reuben C. Baetz Mrs. S. M. Milne and Ralph Patterson: to be members for two years from Apr. 1, 1969 W. John Whittaker, William Dodge, H. D. Woods, Gower H. Markle and John Ewasew to be members for three years from Apr. 1, 1969. Paul-Émilien Dalpé: to be a member fo one year from Apr. 1, 1969. *June 2,* Sydney David Pierce: to be Chairman for three years. **1970.** *June 4,* Edward D. Brown; Jean-Réal Cardin; Paul-Émilien Dalpé; and Mrs. R. D. Jennings: to be members for three years.

Canadian Broadcasting Corporation.—1970. *Jan. 22,* James S. Palmer, Calgary, Alta.: to be a Director for three years, *vice* Mrs. Una MacLean Evans.

Canadian Commercial Corporation.—1970. *Sept. 11,* Thomas Murdoff Burns, Assistant Deputy Minister, Department of Industry, Trade and Commerce; Jean Henry de Puyjalon, Assistant Deputy Minister, Department of Supply and Services; Guy Coulombe, Assistant Deputy Minister, Department of Supply and Services; and Robert Charles David Laughton, Director General of Purchasing, Department of Supply and Services: to be Directors, *vice* Robert M. Keith, deceased, David B. Mundy, William H. Huck and Ralph M. Trites; and James Derby Miller, Director General, Operations Branch, Canadian International Development Agency: to be a Director.

Canadian Consumer Council.—1970. *Oct. 29,* Hon. Réjane L. Colas, Carmelle Bérubé, Irénée Bonnier, Harold Buchwald, G. C. Clarke, David Kirk, André Laurin, George S. May, William A. W. Neilson, Mme Antonio Paradis, Mrs. A. F. W. Plumptre, Gwen Robertson, Anna Templeton and Jacob S. Ziegel: to be again members, from Oct. 31, 1970 to Dec. 31, 1970.

Canadian Council on Urban and Regional Research.—1970. *Feb. 19,* Robert T. Adamson, Walter E. Duffett, Peter H. Aykroyd, Alain de C. Nantel and D. Scrafton: to be members for one year from May 1, 1970.

Canadian Dairy Commission.—1970. *Feb. 26,* Ellard Powers, Beachburg, Ont.: to be a member from Mar. 1, 1970, *vice* L. A. Atkinson.

Canadian Film Development Corporation.—1969. *Oct. 30,* Gratien Gélinas, Montreal, Que.: to be a member until Mar. 1, 1973, *vice* Georges-Émile Lapalme, resigned, and to be Chairman from Nov. 15, 1969.

Canadian International Development Agency.—1970. *Oct. 29,* Paul Gérin-Lajoie: to be President from Nov. 15, 1970.

Canadian Marine Transportation Administration.—1970. *Sept. 11,* Pierre amu, President, St. Lawrence Seaway Authority, Ottawa, Ont.: to be an officer of the Ministry of Transport acting as Administrator for five years from Aug. 1, 1970.

Canadian National Railway Company.—1969. *Nov. 7,* Pierre DesMarais, Montal, Que.: to be a Director for three years. Walter C. Koerner, Vancouver, B.C.; David nderson, Toronto, Ont.; and James Raymond Griffith, Saskatoon, Sask.: to be again irectors for three years from Oct. 1, 1969. *Dec. 19,* N. J. MacMillan, President: to be gain a Director and Chairman for three years from Jan. 1, 1970. **1970.** *Mar. 26,* Charles roft, Winnipeg, Man.: to be a Director for three years from Apr. 1, 1970.

Canadian Overseas Telecommunication Corporation.—1969. *July 10,* G. P. urcell, Toronto, Ont.: to be again a Director for three years. F. Mercier, Montreal, Que.: be a Director for three years, *vice* R. Therrien. **1970.** *Jan. 29,* Ralph Rubin Levine: be a Director for three years from Dec. 1, 1969. Gilles Bergeron, Assistant Deputy Minister, Department of Communications: to be a Director for three years from Jan. 29, 970. *Apr. 9,* Winfield S. Pipes: to be again a Director for three years from Mar. 23, 1970. ec. 3, Elmer Bragg, Collingwood, N.S.: to be again a Director for three years from Nov. 7, 970. *Dec. 4,* Roland Lefrançois: to be a Director for three years.

Canadian Pension Commission.—1969. *July 31,* Donald Arthur Knight, Ottawa, nt.: to be a member for ten years from July 21, 1969. *Oct. 2,* Lawrence Wilmot Brown: be again an *ad hoc* member for a period of one year from Oct. 3, 1969. *Oct. 30,* Ulric lier: to be again an *ad hoc* member for one year from Dec. 1, 1969. *Dec. 19,* Richmond rancis Lionel Hannah, Edmonton, Alta.: to be a member for ten years from Jan. 1, 1970, *ice* Wilbur T. Nixon, deceased. Joseph-Gontran Bisson: to be again an *ad hoc* member for ne year from Jan. 15, 1970. **1970.** *Mar. 19,* Thomas Duncan Anderson: to be again a ommissioner and Chairman for one year, from Apr. 6, 1970. John Lyndon Thompson: be again an *ad hoc* member for one year from Apr. 1, 1970. Allan Omar Solomon: to be member for ten years from May 1, 1970. *June 11,* James Lyall Wightman, Wakefield, ue.: to be a member for ten years from July 1, 1970. *Dec.* 3, Ulric Blier: to be again an *d hoc* member for one year from Dec. 1, 1970. *Dec. 10,* George-Albert-Yves Paré, Montal, Que.: to be an *ad hoc* member for one year. Joseph-Gontran Bisson: to be again an *d hoc* member for one year from Jan. 15, 1971.

Canadian Radio-Television Commission.—1969. *June 5,* Pierre Dansereau: to e a part-time member until Apr. 1, 1973.

Canadian Saltfish Corporation.—1970. *Apr. 9,* E. P. Weeks: to be Chairman for wo years. *Apr. 16,* Aidan J. Maloney: to be President for five years from Apr. 17, 1970. *pr. 17,* A. D. Crerar, Department of Regional Economic Expansion; and C. R. C. Molson, epartment of Fisheries and Forestry: to be Directors for five years. *Apr. 30,* I. N. acKeigan, Halifax, N.S.; and R. M. Clancy, St. John's, Nfld.: to be Directors for three ears.

Canadian Transport Commission.—1969. *May 16,* John Miller Woodard, Ottawa, nt.: to be again a member for ten years from May 19, 1969. *Aug. 27,* R. R. Cope, a Comissioner: to be Vice-President in charge of the superintendence of the programs of study nd research, from Sept. 1, 1969. *Mar. 19,* Ray March, Halifax, N.S.: to be a member for en years, *vice* H. J. Darling. J.-Émile Dumontier: to be again a member from May 26, 970 to Sept. 1, 1970.

Canadian Wheat Board.—1969. *May 16,* Garson Nathaniel Vogel: to be Assistant hief Commissioner from July 1, 1969, *vice* James Biggar Lawrie, retired. Charles W. ibbings: to be a Commissioner from July 1, 1969.

Cape Breton Development Corporation.—1970. *Jan. 29,* R. B. Cameron, a Director: to be Chairman for three years from Feb. 1, 1970, *vice* Douglas Henderson Fullerton, resigned.

Central Mortgage and Housing Corporation.—1970. *May 21,* Mrs. Rosemary Hamilton, Vancouver B.C.: to be a member of the Board of Directors for three years. *June 18,* O. G. Stoner, *vice* Jean Baetz; Edgar Gallant, *vice* J. F. Parkinson; and S. S. Reisman, *vice* R. B. Bryce: to be Directors.

Company of Young Canadians.—1969. *Sept. 24,* Jean Thibault, Quebec, Que.; and Lloyd Axworthy, Winnipeg, Man.: to be members of the Council for two years. Michael Kirby, Halifax, N.S.; Jeannette Corbière, Toronto, Ont.; and Shawn Sullivan, Vancouver, B.C.: to be members of the Council for one year. *Dec. 19,* Max Mendelsohn, Montreal, Que.: to be Comptroller. **1970.** *Mar. 26,* Jack Johnson, Calgary, Alta.; Dal Brodhead, Toronto, Ont.; Pierre Brien, Ottawa, Ont.; and Michael Kirby, Halifax, N.S.: to be members of the Council for two years. Shawn Sullivan, Vancouver, B.C.; Lloyd Axworthy, Winnipeg, Man.; Laurent Laliberté, Montreal, Que.; Max Mendelsohn, Montreal, Que.; and Mrs. Yves Nantel, Montreal, Que.: to be members of the Council for one year. *Oct. 27,* Dal Brodhead, Toronto, Ont.: to be Executive Director from Oct. 15, 1970.

Construction Industry Development Council.—1970. *Feb. 9,* John Cochran, Montreal, Que.: to be a member and Chairman. Ralph D. Hindson, Ottawa, Ont.: to be a member and Vice-Chairman. Don G. Laplante, Ottawa, Ont.: to be a member and Secretary. W. M. Armstrong, Vancouver, B.C.; Hector Asselin, Montreal, Que.; R. A. Bird, Toronto, Ont.; D. Blenkhorne, Toronto, Ont.; A. W. Cluff, Toronto, Ont.; Guy Desbarats, Montreal, Que.; (Rev.) Gérard Dion, Quebec, Que.; J. R. Faulds, Toronto, Ont.; J. R. Forest, Vancouver, B.C.; P. G. Fortier, Ottawa, Ont.; W. F. Foster, Vancouver, B.C.; R. N. Fournier, Toronto, Ont.; J. Y. Gélinas, Dorval, Que.; Félix Guibert, Montreal, Que.; D'Arcy G. Helmer, Ottawa, Ont.; Neil B. Hutcheon, Ottawa, Ont.; R. G. Johnson, Toronto, Ont.; H. P. Labelle, Montreal, Que.; W. Ladyman, Toronto, Ont.; W. G. Leithead, Vancouver, B.C.; Ian MacLennan, Ottawa, Ont.; I. F. B. McBride, Edmonton, Alta.; H. M. Millar, Ottawa, Ont.; H. K. Morley, Downsview, Ont.; F. J. K. Nicol, Toronto, Ont.; H. H. Norsworthy, Toronto, Ont.; Réjean Parent, Montreal, Que.; T. M. Phelan, Montreal, Que.; R. G. Robbie, Toronto, Ont.; L. R. Shaw, Halifax, N.S.; E. J. Smith, Winnipeg, Man.; J. P. Vaughan, Halifax, N.S.; J. Wood, Calgary, Alta.: to be members.

Crown Assets Disposal Corporation.—1969. *June 26,* Lucien Lalonde: to be a Director for three years, *vice* Jean Roch Brisson, resigned. **1970.** *Feb. 12,* Jean Boucher, Deputy Minister of Supply, Ottawa, Ont.: to be a Director for three years from Jan. 1, 1970. *Sept. 17,* Jean Miquelon: to be again a Director for three years from Sept. 15, 1970. *Oct. 29,* Jean Henry de Puyjalon, Assistant Deputy Minister, Department of Supply and Services: to be a Director for three years, *vice* Lucien Lalonde.

Defence Research Board.—1969. *June 2,* Léon-Joseph-Jean L'Heureux: to be Chairman. John Draper Houlding, Montreal, Que.; and Allan Bishop Van Cleave, Regina, Sask.: to be again members for three years from Apr. 7, 1969. Wilfred Gordon Bigelow, Toronto, Ont.: to be again a member for three years from May 1, 1969. *July 10,* Harry Sheffer, Ottawa, Ont.: to be Vice-Chairman from July 1, 1969. **1970.** *Feb. 12,* William James Cheesman, Hamilton, Ont.: to be a member for three years.

Dominion Coal Board.—1969. *July 17,* Claude M. Isbister, G. M. MacNabb, J. M. Harrison, Jean-Paul Drolet, J. C. Allen, W. K. Buck and A. Ignatieff, officers of the Department of Energy, Mines and Resources: to be members.

Dominion Council of Health.—1969. *July 10,* Mimi M. Belmonte, Montreal, Que.; Gaston Rodrigue, Sherbrooke, Que.; Irial Gogan, Calgary, Alta.; and J. Wendell Macleod, Ottawa, Ont.: to be members for three years.

Economic Council of Canada.—1969. *May 14,* Paul Babey, Myrnam, Alta.; and ucien Saulnier, Montreal, Que.: to be members for three years. François-E. Cleyn, untingdon, Que.; Walter C. Koerner, Vancouver, B.C.; William Ladyman, Toronto, Ont.; anley A. Little, Ottawa, Ont.; J. R. Murray, Winnipeg, Man.; Mrs. A. F. W. Plumptre, est Hill, Ont.; and Francis G. Winspear, Edmonton, Alta.: to be again members for three ears. *Sept. 30,* Otto Édouard Thür, Montreal, Que.: to be a member and Director, and be Vice-Chairman. **1970.** *Feb. 12,* Marcel Pépin, Montreal, Que.; H. A. Martin, Vanouver, B.C.; W. Y. Smith, Fredericton, N.B.; and G. F. Towers, Ottawa, Ont.: to be again embers for three years. R. Gaudry, Montreal, Que.: to be a member for three years. *pr. 30,* William O. Twaits, Toronto, Ont.; and W. C. Y. McGregor, Montreal, Que.: to e members for three years.

Export Development Corporation.—1969. *Sept. 26,* J. H. Warren, Deputy Minter of Industry, Trade and Commerce: to be Chairman and a Director from Oct. 1, 1969. obert B. Bryce, Deputy Minister, Department of Finance; Louis Rasminsky, Governor, ank of Canada; Maurice Strong, President, Canadian International Development Agency; . C. Audette, Chairman, Tariff Board; J. C. Langley, Assistant Under-Secretary of State r External Affairs; H. T. Aiken, President, Export Credits Insurance Corporation; and . G. Kniewasser, Senior Assistant Deputy Minister, Department of Industry, Trade and ommerce: to be Directors from Oct. 1, 1969, H. T. Aiken to be President. R. D. Southern, algary, Alta.: to be a Director until Oct. 1, 1970. P. R. Sandwell, Vancouver, B.C.: to be Director until Oct. 1, 1971; A. F. Mayne, Montreal, Que.: to be a Director until Oct. 1, 972; and P. H. Leman, Montreal, Que.: to be a Director until Oct. 1, 1974. **1970.** *Mar. 3,* S. Simon Reisman, from among persons employed in the Public Service of Canada: to e a Director from Apr. 1, 1970, *vice* Robert B. Bryce. *Apr. 14,* Ernest A. Oestreicher, irector, International Programmes Division, Department of Finance: to be an alternate irector for S. Simon Reisman. *Sept. 11,* Stephen J. Handfield-Jones: to be alternate irector for S. Simon Reisman from Aug. 1, 1970. *Sept. 17,* Ronald D. Southern, Calgary, lta.: to be a Director until Oct. 1, 1973. *Nov. 27,* A. R. Hollbach: to be alternate Director r A. G. Kniewasser, a Director appointed from among persons employed in the Public ervice of Canada, *vice* B. C. Steers, from Oct. 1, 1970. *Dec. 3,* Paul Gérin-Lajoie, from mong persons employed in the Public Service of Canada: to be a Director, *vice* Maurice rong.

Farm Credit Corporation.—1969. *Sept. 24,* George Owen and William Harvey zard: to be again members for three years from Dec. 9, 1969, and to be Chairman and ice-Chairman, respectively. Thomas K. Shoyama, Assistant Deputy Minister, Departent of Finance: to be a member for three years from Sept. 24, 1969, *vice* Robert B. Bryce.

Fisheries Prices Support Board.—1969. *May 16,* Eric S. Turnill, Vancouver, B.C.: be a member until Apr. 1, 1974, *vice* Richard I. Nelson.

Fisheries Research Board of Canada.—1969. *May 15,* J. R. Weir, Ottawa, Ont.: be Chairman.

Freshwater Fish Marketing Corporation.—1969. *May 16,* Donald Morton ewart, Hay River, N.W.T.; William Ralph Parks, Regina, Sask.; and Russ Elmer Paridge, Prince Albert, Sask.: to be Directors for two years. *Sept. 11,* Stuart Boland Smith, dmonton, Alta.; and Mervin John Brubacher, Toronto, Ont.: to be Directors for two years. *pt. 24,* Chester MacEwan: to be a temporary substitute Director until Mar. 7, 1971, *vice* N. Gordon. *Oct. 15,* Mark Harold Danzker, Winnipeg, Man.: to be a Director until eb. 27, 1972. **1970.** *Feb. 17,* Arthur William Wood, Winnipeg, Man.: to be a Director r two years. *Mar. 13,* George Ellwood Couldwell, Prince Albert, Sask.: to be a Director r two years, *vice* William Ralph Parks. *Sept. 24,* Robert Elmer McLaren, Winnipeg, an.: to be a Director for two years. Fernand-Joseph Doucet, Ottawa, Ont.: to be a irector for two years, *vice* J.-B. Bergevin.

Great Lakes Fishery Commission.—1969. *Oct. 30,* Charles Henry Douglas Clarke, Toronto, Ont.: to be a Commissioner for Canada for two years from Oct. 10, 1969. Frederick Ernest Joseph Fry, Toronto, Ont.: to be a Commissioner for Canada for two years, *vice* Arthur Owen Blackhurst.

Historic Sites and Monuments Board of Canada.—1969. *Sept. 24,* Marc La Terreur, Quebec, Que.: to be a member for three years. *Nov. 13,* Francis W. P. Bolger, Charlottetown, P.E.I.: to be a member for five years. **1970.** *May 21,* Leslie Harris, St. John's, Nfld.: to be again a member for five years from Oct. 1, 1970. *Dec. 3,* George Anderson, Pointe-du-Bois, Man.: to be a member until July 1, 1973, *vice* E. S. Russenholt.

Immigration Appeal Board.—1969. *Dec. 19,* Jean-Pierre Houle, a member: to be a Vice-Chairman. **1970.** *Feb. 25,* Hon. Lucien Cardin: to be a member.

Information Canada.—1970. *Mar. 26,* Jean-Louis Gagnon: to be Director from Apr. 1, 1970. *June 5,* R. A. J. Phillips: to be Deputy Director.

Inter-American Tropical Tuna Commission.—1970. *Sept. 24,* Léo-E. Labrosse, Montreal, Que.; and Robert L. Payne, Vancouver, B.C.: to be Commissioners for two years. *Dec. 17,* G. Ernest Waring: to be a Commissioner for two years, *vice* Léo-E. Labrosse.

International Bank for Reconstruction and Development.—1969. *Aug. 13,* Maurice Strong, President of the Canadian International Development Agency, to be alternate Governor in place of Alan Bond Hockin.

International Commission for the Conservation of Atlantic Tunas.—1969. *Nov. 20,* William M. Sproules, Director, Office of Fisheries Relations, Department of Fisheries and Forestry, Ottawa, Ont.: to be a delegate.

International Commission for the Northwest Atlantic Fisheries.—1969. *June 5,* H. Douglas Pyke, Lunenburg, N.S.: to be a Commissioner for a further period of six months from May 28, 1969. **1970.** *Apr. 23,* Spencer G. Lake, Burgeo, Nfld.: to be again a Canadian Commissioner for two years from Apr. 3, 1970.

International Council for the Exploration of the Sea.—1969. *July 31,* J. R. Weir, Chairman, Fisheries Research Board of Canada, Ottawa, Ont.: to be a Canadian delegate, *vice* F. R. Hayes. **1970.** *May 26,* R. R. Logie, Assistant Deputy Minister (Fisheries): to be a delegate *vice* A. W. H. Needler.

International Development Research Centre.—1970. *May 21,* William David Hopper: to be President for five years. *Oct. 22,* Rt. Hon. Lester Bowles Pearson, Ottawa, Canada: to be Chairman of the Board of Governors for five years. Pierre Bauchet, Paris, France; Roberto Campos, Rio de Janeiro, Brazil; Sir John Crawford, Canberra, Australia; A. L. Dias, Tripura, India; Louis Berlinguet, Quebec, Canada; and C. F. Bentley, Edmonton, Canada: to be members of the Board of Governors for four years. Lady Barbara Ward Jackson, London, U.K.; Rex M. Nettleford, Kingston, Jamaica; H. A. Oluwasanmi, Western State, Nigeria; John G. Bene, Vancouver, Canada; Lila E. Engberg, Guelph, Canada; and Irving Brecher, Montreal, Canada: to be members of the Board of Governors for three years. René J. Dubos, New York, U.S.A.; M. Sankale, Dakar, Senegal; P. Ungphakorn, Bangkok, Thailand; A. F. W. Plumptre, Toronto, Canada; Maurice Strong, Ottawa, Canada; and Ralph N. Medjuck, Halifax, Canada: to be members of the Board of Governors for two years. *Nov. 27,* Paul Gérin-Lajoie, Ottawa, Canada: to be a member of the Board of Governors for two years.

International Joint Commission.—1969. *May 1,* Bernard Beaupré, Richelieu, Que.: to be a Commissioner for three years from Nov. 1, 1969. René Dupuis: to continue

as Commissioner from May 5, 1969 to Oct. 31, 1969, inclusive. **1970.** *July 9,* A. D. Scott: to be again a Commissioner from July 1, 1970 to June 30, 1972.

International Monetary Fund.—1969. *Aug. 13,* Louis Rasminsky, Governor of the Bank of Canada, to be Governor, *vice* Hon. Edgar John Benson. Alan Bond Hockin, Assistant Deputy Minister of Finance: to be alternate Governor in place of Louis Rasminsky. **1970.** *July 31,* William Clarence Hood: to be alternate Governor in place of Alan Bond Hockin from June 1, 1970.

International North Pacific Fisheries Commission.—1969. *Sept. 24,* James Cameron, Madeira Park, B.C.; and Carl Giske, Prince Rupert, B.C.: to be again members for two years from Sept. 6, 1969. **1970.** *May 26,* A. W. H. Needler, Deputy Minister of Fisheries and Forestry: to be a member, *vice* S. V. Ozere. R. R. Logie, Assistant Deputy Minister (Fisheries): to be an alternate Canadian member. *July 23,* Donovan Francis Miller, Vancouver, B.C.: to be again a member for two years from Aug. 21, 1970.

International Pacific Halibut Commission.—1969. *Oct. 30,* Martin K. Eriksen: to be again a member until Nov. 1, 1971. **1970.** *Sept. 24,* F. W. Millerd, Vancouver, B.C.: to be again a member for two years from Oct. 31, 1970.

International Pacific Salmon Fisheries Commission.—1970. *Feb. 5,* Roderick Haig-Brown, Campbell River, B.C.: to be a Commissioner for two years.

Manitoba-Saskatchewan Boundary Commission.—1970. *Jan. 27,* Allen C. Roberts, Director of Surveys, Department of Mines and Natural Resources, Province of Manitoba: to be a member, *vice* Edward Gauer.

Medical Research Council.—1969. *May 16,* G. Malcolm Brown, Ottawa, Ont.: to be President. *June 12,* Louis Berlinguet, Quebec, Que.; Robert Valentine Blackmore, Edmonton, Alta.; George E. Connell, Toronto, Ont.; Antoine D'Iorio, Ottawa, Ont.: James Donald Hatcher, Kingston, Ont.; Louis Horlick, Saskatoon, Sask.; J. Maurice LeClair, Sherbrooke, Que.; Bernard E. Riedel, Vancouver, B.C.; John Conrad Szerb, Halifax, N.S.; and John Charles Wilt, Winnipeg, Man.: to be members from Apr. 15, 1969 to July 1, 1970. John C. Beck, Montreal, Que.; Claude Bertrand, Montreal, Que.; David Dickson, Calgary, Alta.; Stephen Michael Drance, Vancouver, B.C.; John R. Evans, Hamilton, Ont.; Arthur Murray Hunt, Toronto, Ont.; Thomas Sydney Leeson, Edmonton, Alta.; Jean-Paul Lussier, Montreal, Que.; Kenneth Bryson Roberts, St. John's, Nfld.; Harold Brown Stewart, London, Ont.; and Gilles Tremblay, Montreal, Que.: to be members from Apr. 15, 1969 to July 1, 1971. Pursuant to Subsect. (1) of Sect. 58 of the Government Organization Act, 1969, the election by the members of the Medical Research Council of Dr. Maurice LeClair, Dean of Medicine, University of Sherbrooke, as Vice-President of the Medical Research Council, for a term expiring effective July 1, 1970, is approved. **1970.** *Aug. 7,* Mary Ellen Avery, Montreal, Que.; William R. Awrey, Hamilton, Ont.; Jean Himms-Hagen, Ottawa, Ont.; Guy Lamarche, Sherbrooke, Que.; Yves L. Morin, Quebec, Que.; and Kenneth Jack Paynter, Saskatoon, Sask.: to be members for three years. Claude Fortier, Quebec, Que.; Marcel Caron, Montreal, Que.; Richard B. Goldbloom, Halifax, N.S.; Gerald H. D. Hobbs, Vancouver, B.C.; and John W. Steele, Winnipeg, Man.: to be members for two years. Louis Horlick, Saskatoon, Sask.: to be again a member for two years. Gilles Tremblay, Montreal, Que.: to be Vice-President.

National Arts Centre.—1969. *Oct. 30,* François Mercier, Montreal, Que.: to be Chairman of the Board of Trustees for four years, *vice* Lawrence Freiman, resigned. *Dec. 19,* Anson C. McKim: to be again a member of the Board of Trustees for three years from Dec. 1, 1969. *Feb. 6,* Arthur Gelber, Toronto, Ont.; and (Rev. Father) Z. Musielski, Toronto, Ont.: to be members of the Board of Trustees for three years. Madeleine Gobeil, Ottawa, Ont.: to be again a member of the Board of Trustees for one year.

National Capital Commission.—1969. *May 1*, Alfred John Frost: to be again a member and Chairman from Apr. 29, 1969 to May 31, 1969, inclusive. *June 2*, Alfred John Frost: to be again a member and Chairman from June 1, 1969 to June 30, 1969. *June 26*, Alfred John Frost: to be again a member and Chairman from July 1, 1969 to July 31, 1969, inclusive. *July 29*, Alfred John Frost: to be again a member and Chairman from Aug. 1, 1969 to Aug. 31, 1969, inclusive. *Aug. 13*, Douglas Henderson Fullerton: to be a member for four years and to be Chairman from Sept. 1, 1969. *Oct. 13*, Hon. Robert Knight Andras: to be the appropriate Minister with respect to the National Capital Commission pursuant to Sect. 2 of the Financial Administration Act.

National Council of Welfare.—1969. *Dec. 11*, William Dyson, Montreal, Que. to be Chairman for three years. Leslie Harris, St. John's, Nfld.; J. Clyde Nunn, Antigonish, N.S.; Thérèse Longpré, Montreal, Que.; Jeanne Racine, Quebec, Que.; Claire Kerrigan, Montreal, Que.; Simonne Bastien Tarte, Ottawa, Ont.; Harry Penny, Hamilton, Ont.; Marion Meadmore, Winnipeg, Man.; Douglas Thomas, Saskatoon, Sask.; and Donald Moses, Merritt, B.C.: to be members for one year. Jules Oliver, Halifax, N.S.; Alexander Doucet, Moncton, N.B.; Michel Blondin, Montreal, Que.; Jacques Gagné, Sherbrooke, Que.; Romeo Maione, Montreal, Que.; Wilson A. Head, Toronto, Ont.; Suzanne Polgar, Toronto, Ont.; June Rowlands, Toronto, Ont.; Mary Alice Payne, Calgary, Alta.; and Walter Olszewski, Victoria, B.C.: to be members for two years. **1970.** *Jan. 15*, Gwyneth Elizabeth French, Montreal, Que.: to be a member until Dec. 11, 1970. *Sept. 17*, Jean Ayotte, Montreal, Que.: to be a member until Dec. 11, 1971.

National Design Council.—1970. *June 18*, I. C. Pollack, Quebec, Que., a member: to be Chairman, *vice* John C. Parkin. F. R. Johnson, Toronto, Ont.; Henri Olivier, Sorel, Que.; J. D. Muncaster, Toronto, Ont.; Gordon R. Arnott, Regina, Sask.; Allan R. Fleming, Toronto, Ont.; G. Holbrook, Halifax, N.S.; J. Boucher, Ottawa, Ont.; and J. A. MacDonald, Ottawa, Ont.: to be members for three years. *Sept. 17*, J. F. Grandy, Ottawa, Ont.: to be a member for three years.

National Energy Board.—1970. *Sept. 24*, A. Cossette Trudel: to be a member for seven years from Oct. 1, 1970. *Dec. 10*, Neil J. Stewart: to be a member for seven years from Jan. 1, 1971, and to be Associate Vice-Chairman. Charles Geoffrey Edge: to be a member for seven years from Jan. 1, 1971.

National Film Board.—1970. *Apr. 17*, Phyllis Grosskurth, Toronto, Ont.; Gilles Bergeron, Ottawa, Ont.; A. W. Johnson and Paul Tremblay: to be members for three years. *Aug. 12*, Sidney Newman: to be Chairman and to be Government Film Commissioner; André Lamy: to be Assistant Commissioner.

National Harbours Board.—1970. *May 7*, D. E. Taylor, a member of the St. Lawrence Seaway Authority: to be a member for ten years.

National Joint Council.—1969. *Oct. 21*, F. G. Malo, Assistant Deputy Postmaster General (Personnel): to be an alternate member to the Official Side, *vice* R. M. Adams. **1970.** *Apr. 9*, J. P. Connell: to be Chairman. F. G. Malo: to be Chairman, Official Side. R. Steward: to be alternate Chairman, Official Side. H. R. Balls, S. B. Williams, E. A. Côté, J. S. Hodgson, F. A. Faguy, R. C. Labarge, K. F. Tupper, J. A. MacDonald and J. F. Grandy: to be members, Official Side. H. D. Clark, J. B. Hartley, F. L. W. McKim, T. G. Morry, I. Harlock, W. R. Green, G. P. Vachon, E. B. Meredith and F. M. Tovell: to be alternate members, Official Side. R. Bolduc: to be Secretary, Official Side.

National Library.—1970. *Jan. 22*, Lachlan Farquhar MacRae, Guelph, Ont.: to be Associate National Librarian.

National Museums of Canada.—1969. *June 12*, David Spurgeon, Toronto, Ont.: to be Vice-Chairman of the Board of Trustees until Mar. 31, 1973, *vice* J. Ronald Longstaffe,

esigned. **1970.** *Apr. 23,* Louis Lemieux, Ottawa, Ont.: to be Director of the National Museum of Natural Sciences from May 1, 1970. *Apr. 30,* Kiyoshi Izumi, Regina, Sask.; nd J. Tuzo Wilson, Toronto, Ont.: to be members of the Board of Trustees for four years.

National Parole Board.—1969. *May 16,* W. R. Outerbridge, Aurora, Ont.: to be a nember for ten years from Aug. 15, 1969. *Oct. 1,* Michael Maccagno: to be a member for en years from Oct. 1, 1969. *Oct. 10,* Roy McWilliam: to be a member for three years. 3. Kyle Stevenson: to be a member for ten years. Claude-A. Bouchard: to be a member for en years. **1970.** *June 18,* G.-André Therrien, a member: to be Vice-Chairman from June 1, 970. *July 23,* Mary Louise Lynch, Saint John, N.B.: to be a member from Oct. 1, 1970 o Nov. 27, 1974.

National Research Council of Canada.—1969. *May 16,* Arthur Newcombe Bourns, Hamilton, Ont.; Jean-Paul Gignac, Montreal, Que.; George William Holbrook, Halifax, N.S.; Eric W. Leaver, Willowdale, Ont.; Lucien Piché, Montreal, Que.; and Harry David Bruce Wilson, Winnipeg, Man.: to be members until Apr. 1, 1972. James Milton Ham, Toronto, Ont.: to be a member from July 1, 1969 to Apr. 1, 1972. *Sept. 17,* George Michael Volkoff, Vancouver, B.C.: to be a member from Sept. 1, 1969 to Apr. 1, 1971. **970.** *June 11,* E. B. Campbell, Regina, Sask.; and Thérèse Gouin Décarie, Montreal, Que.: to be members until Apr. 1, 1973. J. M. Robson, Montreal, Que.: to be again a nember until Apr. 1, 1973. *June 25,* Mary Eileen Spencer, Edmonton, Alta.: to be a nember until Apr. 1, 1973.

Northern Canada Power Commission.—1970. *Jan. 22,* Basil Robinson: to be a nember and Chairman, *vice* John A. MacDonald. Albin Digby Hunt, Acting Assistant Deputy Minister, Northern Development, Department of Indian Affairs and Northern Development: to be a member, *vice* Jean-Baptiste Bergevin.

Parliamentary Library.—1970. *July 31,* Gilles Frappier: to be Associate Parliamentary Librarian.

Prairie Provinces Water Board.—1970. *Jan. 14,* A. T. Davidson, Assistant Deputy Minister (Water), Department of Energy, Mines and Resources: to be a member and Chairman. J. G. Watson, Chief Engineer, Prairie Farm Rehabilitation Administration: o be a member.

Public Service Arbitration Tribunal.—1970. *May 26,* Hon. André Montpetit, a udge of the Superior Court of Quebec, Montreal, Que.: to be Chairman for three years from une 1, 1970. *Oct. 1,* His Honour Judge Walter Little, Parry Sound, Ont.: to be an alternate Chairman for two years from Oct. 1, 1970. *Nov. 12,* A. W. R. Carrothers, Calgary, Alta.: o be alternate Chairman for two years.

Public Service Commission.—1969. *Dec. 24,* Charles Lussier: to be a member rom Jan. 1, 1970.

Public Service Staff Relations Board.—1969. *May 8,* Edward Bigelow Jolliffe: o be an adjudicator and also to be Chief Adjudicator for five years on a full-time basis from May 1, 1969. *Aug. 6,* Fernand Morin, Quebec, Que.: to be again an adjudicator for two ears on a part-time basis from Sept. 1, 1969. *Nov. 13,* W. Steward Martin, Winnipeg, Man.: to be again an adjudicator for one year on a part-time basis from Nov. 1, 1969. **970.** *Jan. 29,* J. F. W. Weatherill, Toronto, Ont.: to be again an adjudicator for three ears on a part-time basis from Apr. 1, 1970. *Mar. 13,* Paul E. Bernier, Quebec, Que.: o be an adjudicator for two years on a part-time basis. *Apr. 30,* Paul-Émile Gosselin, Montreal, Que.: to be a member as a representative of the interests of employees for seven ears, *vice* J.-R. Cardin, resigned. *May 21,* C. Philip Chaston, Toronto, Ont.: to be a nember as a representative of the interests of the employer for seven years, *vice* J. Guilbault,

resigned. *Oct. 7*, H. W. Arthurs, Toronto, Ont.: to be again an adjudicator for two years, on a part-time basis, from Oct. 1, 1970. Perry Meyer, Montreal, Que.: to be an adjudicator for two years on a part-time basis from Aug. 1, 1970.

Royal Canadian Mint.—1969. *Nov. 13*, John Convey, Director, Mines Branch, Department of Energy, Mines and Resources: to be a Director for one year. Stanley Marsland, Kitchener, Ont.: to be a Director for two years. Philippe Girard, Montreal, Que.; and W. L. Wardrop, Winnipeg, Man.: to be Directors for three years. Jean Boucher, Deputy Minister of Supply: to be Chairman of the Board of Directors for four years from Feb. 12, 1970. *Sept. 11*, Angus Sinclair Abell: to be a Director until Apr. 1, 1971.

Royal Canadian Mounted Police.—1969. *Oct. 1*, William Leonard Higgitt, Deputy Commissioner: to be Commissioner from Oct. 1, 1969, *vice* M. F. A. Lindsay. John Kenneth Starnes, Director of General Security and Intelligence: to be Deputy Commissioner.

St. Lawrence Seaway Authority.—1970. *July 31*, Pierre Camu, Ottawa, Ont.: to be again President for five years from Aug. 1, 1970.

Science Council of Canada.—1969. *May 16*, Omond McKillop Solandt, Toronto, Ont.; and Roger Gaudry, Montreal, Que.: to be again members and also Chairman and Vice-Chairman, respectively, for three years from May 24, 1969. *July 31*, J. D. Houlding, Montreal, Que.; L. Katz, Saskatoon, Sask.; and H. E. Petch, Waterloo, Ont.: to be again members for three years from June 7, 1969. P. E. Gendron, Montreal, Que.; and L. J. L'Heureux, Ottawa, Ont.: to be members for three years. J. R. Weir: to be a member for three years. A. W. H. Needler, J. M. Harrison and R. J. Uffen: to be associate members. **1970.** *July 31*, Carol Buck, London, Ont.; Gabriel Filteau, Quebec, Que.; Pauline Jewett, Ottawa, Ont.; Clay Gilson, Winnipeg, Man.; William G. Leithead, Vancouver, B.C.; Mervyn Franklin, Fredericton, N.B.; A. E. Pallister, Calgary, Alta.: to be members for three years. G. N. Patterson, Toronto, Ont.; and W. M. Armstrong, Vancouver, B.C.: to be again members for three years. *Oct. 29*, Irene Uchida, McMaster University, Hamilton, Ont.: to be a member for three years. The appointment of Pauline Jewett as a member was revoked.

Standards Council of Canada.—1970. *Nov. 5*, Jean-Claude Lessard, Montreal, Que.: to be a member and President for three years from Nov. 16, 1970.

Tariff Board.—1969. *May 1*, L. C. Audette, Ottawa, Ont.: to be again a member and Chairman. George H. Glass, Ottawa, Ont.: to be again a member and first Vice-Chairman. Wilfred T. Dauphinee, Halifax, N.S.: to be a member and second Vice-Chairman.

Telesat Canada.—1969. *Aug. 6*, D. A. Golden: to be a provisional Director and President from Sept. 1, 1969. *Sept. 11*, J. H. Chapman, Z. B. Krupski, R. D. Southern, L. Picard, A. G. Archibald and J. A. Ouimet: to be provisional Directors. *Sept. 15*, J. A. Ouimet: to be Chairman. *Dec. 10*, J. A. Ouimet, R. D. Southern, S. S. Reisman, L. Picard and F. G. Nixon: to be Directors.

Treasury Board.—1970. *Mar. 13*, Albert W. Johnson: to be Secretary from Apr. 1, 1970.

Unemployment Insurance Commission.—1969. *June 26*, Thomas Brigham Ward: to be again a Commissioner until Jan. 12, 1972. **1970.** *June 4*, Morris C. Hay: to be again a Commissioner until Jan. 12, 1972.

War Veterans Allowance Board.—1969. *July 17,* Marcel Robert Dupuis, Ottawa, t.: to be again a temporary member for one year from Aug. 1, 1969. John Harold cDougal Dehler, Ottawa, Ont.: to be again a temporary member for one year from Oct. 15, 69. *Oct. 21,* W. Bruce Brittain, Assistant Deputy Minister, Department of Veterans fairs: to be alternate member for John S. Hodgson, *vice* F. T. Mace. **1970.** *Feb. 26,* nest Gordon Blair Foote, Ottawa, Ont.: to be again a temporary member for one year m May 15, 1970. *May 26,* Marcel Robert Dupuis, Ottawa, Ont.: to be again a temporary mber for one year from Aug. 1, 1970. *Dec. 3,* Donald M. Thompson, Ottawa, Ont.: be a member and Chairman from Dec. 3, 1970.

Commissions of Inquiry.—*Commission under Part I of the Inquiries Act to inquire o and report upon the non-medical use of certain drugs and substances, particularly those ving sedative, stimulant, tranquillizing or hallucinogenic properties, and the effect of such on the individual and the social implications thereof.*—**1969.** *May 29,* Gerald Le Dain, ronto, Ont.: to be a Commissioner and Chairman. Ian Lachlan Campbell, Lennoxville, e.; Heinz E. Lehmann, Montreal, Que.; André Lussier, Montreal, Que.; and J. Peter in, Vancouver, B.C.: to be Commissioners. *Oct. 10,* Marie-Andrée Bertrand: to be a mmissioner, *vice* André Lussier.

Commission under Part I of the Inquiries Act, to be known as the Prices and Incomes mmission, to inquire into and report upon the causes, processes and consequences of inflation d to inform those making current price and income decisions, the general public and the vernment on how price stability may best be achieved.—**1969.** *June 19,* John Humphrey ung, Vancouver, B.C.: to be a Commissioner and Chairman. Paul Gérin-Lajoie, rion, Que.: to be a Commissioner and Vice-Chairman. George Edwin Freeman, Ottawa, t.; and George Vickers Haythorne, Ottawa, Ont.: to be Commissioners.

Commission under Part II of the Inquiries Act to inquire into and report upon the circumnces in which on the 5th of July, 1969, there occurred the escape of three inmates from a itentiary located at the City of Laval, Province of Quebec.—**1969.** *July 15,* Hon. Claude son, a Judge of the Superior Court of Quebec, District of Montreal: to be a Commissioner.

Commission under Part I of the Inquiries Act to consult with authorized representatives he Indians, to receive and study grievances with respect to terms of treaties and administration moneys and lands, and to make recommendations re adjudication of claims and awards.— **0.** *Jan. 17,* Lloyd Barber, Vice-President, University of Saskatchewan, Saskatoon: be Commissioner.

Commission under Part I of the Inquiries Act, to constitute a Bilingual Districts Advisory rd to exercise and perform the powers and duties conferred upon a Bilingual Districts visory Board by the Official Languages Act.—**1970.** *Feb. 12,* Roger Duhamel, Rockcliffe, t.; Paul W. Fox, Toronto, Ont.; Roger St-Denis, Ottawa, Ont.; Madeleine Joubert, ntreal, Que.; Murray Ballantyne, Montreal, Que.; H. D. Smith, Halifax-Truro, N.S.; élard Savoie, Moncton, N.B.; Lenore McEwan, Saskatoon, Sask.; Alfred Monnin, nnipeg, Man.; and Harry Hickman, Victoria, B.C.: to be Commissioners. Roger hamel to be Chairman.

Commission under Part I of the Inquiries Act on the Prices and Incomes Commission suant to Order in Council P.C. 1969-1249 of 19th June, 1969.—**1970.** *Mar. 5,* Bertram y Barrow: to be a Commissioner until Apr. 1, 1971.

Commission under Part I of the Inquiries Act to inquire into and report upon the pollution Canadian waters by oil escaping from the steam tanker Arrow following the grounding of the l tanker on Cerberus Rock, in Chedabucto Bay, N.S., on the 4th day of February, 1970.— **0.** *Mar. 12,* Hon. Gordon L. S. Hart, a Judge of the Supreme Court of the Province of va Scotia, Halifax, N.S.: to be a Commissioner.

Public investigation under the Canada Shipping Act, into the Aug. 2 collision betwee the British Columbia Ferry Queen of Victoria and the Russian freighter Sergey Yesenin.—**1970** *Aug. 18,* Hon. E. J. C. Stewart, a Judge of the County Court, Vancouver, B.C.: to b Chairman.

Foreign Claims Commission to inquire into and report upon claims made by Canadia citizens and the Government of Canada against Hungarian citizens and the Government o Hungarian People's Republic.—**1970.** *Dec. 8,* Hon. Thane A. Campbell to be Chief Com missioner and Thomas D. MacDonald to be Deputy Commissioner.

Miscellaneous.—**1969.** *Aug. 6,* R. J. Uffen: to be Chief Science Adviser to th Cabinet. *Dec. 19,* Gordon Hunter, Ottawa, Ont.: to be Master of the Mint from Jan. 1 1970. **1970.** *Mar. 24,* Keith Spicer: to be Commissioner of Official Languages for Canad from Apr. 1, 1970. *Aug. 12,* Sydney Newman, Ottawa, Ont.: to be Government Film Commissioner for five years from Aug. 15, 1970. P.-A. Faguy: to be Commissioner o Penitentiaries. *Nov. 5,* P. S. Cooper: to be "The Canadian Secretary to the Queen and Federal Coordinator" for the Royal Visit to British Columbia in May 1971. Alexandre Guy Vandelac: to be Gentleman Usher of the Black Rod from Nov. 1, 1970. *Dec. 10* J. P. Joseph Maingot, Ottawa, Ont.: to be Law Clerk and Parliamentary Counsel of th House of Commons from Jan. 1, 1971, *vice* P.-M. Ollivier.

PART IV.—ORDER OF CANADA AWARDS

In 1967, the Centennial of Confederation, there was established a system of honour and awards for Canada. On the recommendation of the Government, Her Majesty Queen Elizabeth the Second approved the issue of Letters Patent establishing a society of honour to be known as "The Order of Canada" for the purpose of according recognition to Canadian citizens and other persons for merit. The Order consists of three awards—the Companion of the Order of Canada, the Medal of Courage and the Medal of Service. The Chancellor and Principal Companion of the Order is the Governor General and nominations for awards are made directly to the Governor General by an Advisory Council composed of the Chief Justice of Canada (Chairman), the Clerk of the Privy Council, the Under Secretary of State, the Chairman of the Canada Council, the President of the Royal Society of Canada and the President of the Association of Universities and Colleges of Canada. Companions of the Order are selected on the basis of "merit, especially service to Canada or to humanity at large" and the maximum number shall never exceed 150. The Medal of Courage is awarded for the performance of "an act of conspicuous courage in circumstances of great danger" and is not, of course, limited to a fixed maximum number. The Medal of Service is awarded for different categories of meritorious service from that for Companions and not more than 50 may be given in any one year.

The first appointments were made on July 6, 1967 by the Governor General in his capacity as Chancellor and Principal Companion of the Order of Canada; they are listed in the 1969 Canada Year Book at p. 1269, together with subsequent appointments of Dec. 22, 1967, Apr. 30, 1968, June 28, 1968 and Dec. 20, 1968. From the latter date to December 1970, the following appointments were made:—

June 28, 1969

To be Companions of the Order of Canada

Charles S. Band (since deceased)
John J. Deutsch
Ruth Hartman Frankel
Armand Frappier, O.B.E., M.D.
Honourable Leslie M. Frost, P.C., Q.C.
Émile Girardin
Honourable Norman A. M. MacKenzie, C.M.G., M.M., Q.C.
Sir Ernest MacMillan
Jean-Paul Riopelle
Charles S. A. Ritchie
Graham F. Towers, C.M.G.
A. Murray Vaughan

To Receive the Medal of Service of the Order of Canada

Carlyle S. Beals
Benoît Brouillette
Ludmilla Chiriaeff
William H. Cook, O.B.E.
Chief Andrew T. Delisle
Jean-Marie Gauvreau
Herman Geiger-Torel
Lorne Greene
Claude-Henri Grignon
James B. Harrington
T. H. Eva Hasell, M.B.E.
John W. Holmes
Albin T. Jousse, M.D.
Gilbert A. LaBine, O.B.E.
W. Kaye Lamb
Sister Marie Lemire
Monseigneur Irénée Lussier
Frank MacKinnon
William L. Morton
Helen K. Mussallem
John M. Olds, M.D.
Rowan M. Paterson
Marcel Piché, Q.C.
Anaïs Allard Rousseau
Jacques Rousseau
Reginald C. Stevenson, O.B.E.

Dec. 20, 1969

To be Companions of the Order of Canada

Claude T. Bissell
Marcel J. D. Cadieux, Q.C.
Pierre Dansereau
James L. Gray
Lawren S. Harris
William Hutt
Hugh L. Keenleyside
Honourable Ernest C. Manning, P.C.
Jean Martineau, Q.C.
H. Raymond Milner, Q.C., C.D.
H. Rocke Robertson, M.D.
Monseigneur Louis-Albert Vachon

To Receive the Medal of Service of the Order of Canada

Jean Béliveau
Henry Borden, C.M.G.
Reverend Lester L. Burry
Lucille Danis
Harry E. Foster
Captain Paul Moïse Fournier
Russell S. Jackson
Everett C. Leslie, Q.C.
Jean-Claude Lessard
Finlay MacDonald
Lieutenant-Colonel the Honourable Henry P. MacKeen, Q.C., C.D.
Sister Mary of the Annunciation
Mary G. Nesbitt
Andrée Paradis
Denise Pelletier-Zarov
Gillis Purcell
W. Goodridge Roberts
Colonel Charles P. Stacey, O.B.E., C.D.
John B. Stirling, C.D.
Elaine Tanner
Colonel Hugh M. Wallis, D.S.O., O.B.E., M.C., V.D., C.D.
J. Tuzo Wilson, O.B.E.

June 27, 1970

To be Companions of the Order of Canada

J.-Philippe Brais, C.B.E., Q.C.
Right Honourable John R. Cartwright, P.C., M.C.
Most Reverend Howard H. Clark
Robert D. Defries, C.B.E., M.D.
Pierre-R. Gendron
Paul-A. Giguère
Honourable Henry D. Hicks, Q.C.
Marshall McLuhan
Juda H. Quastel
Honourable Dufferin Roblin, P.C.
Sister Ghislaine Roquet
Omond M. Solandt, O.B.E., C.D., M.D.

To Receive the Medal of Service of the Order of Canada

Victor Barbeau
Gordon A. Bates, M.D.
Earle Birney
Malvina Bolus
Robert B. Cameron, D.S.O.
Elizabeth Cass, M.D.
Reverend John H. Enns
Max Ferguson
Stephen Juba
Yyak
René Lecavalier
Gordon Lightfoot
Robert A. MacKay
Dora Mavor Moore
Vice-Admiral John C. O'Brien, C.D.
Philip W. Oland, C.D.
Blanche Paradis
Raymond C. Parker
William J. Parker, M.B.E.
Vida H. Peene
Jean-Marie Poitras
René Pomerleau
Commodore O. C. S. Robertson, G.M., R.D., C.D.
Arnold Spohr
Maitland B. Steinkopf, M.B.E., Q.C.
Gordon W. Thomas, M.D.
Nellie H. West

Dec. 19, 1970

To be Companions of the Order of Canada

A. Davidson Dunton
Gérard Filion
Claude Fortier, M.D.
Honourable Roy L. Kellock, Q.C.
Luc Lacourcière
Honourable Jean Lesage, P.C., Q.C.
Reverend Bernard Lonergan
Harvey R. MacMillan, C.B.E.
Honourable J. W. Pickersgill, P.C.
Lieutenant-General Guy Simonds, C.B. C.B.E., D.S.O., C.D.
John W. T. Spinks, M.B.E.
Graham Spry
Paul H. T. Thorlakson, M.D.

To Receive the Medal of Service of the Order of Canada

Helen Allen
Jean-J. Bourgault
Alexander Brady
Yvette Charpentier
Ian McTaggart Cowan
Claude Gagnon, Q.C.
Philip C. Garratt, A.F.C.
Stuart M. Hodgson
Frances Hyland
Harry Jerome
Samuel R. Laycock
Kenneth Lochhead
Léon Lortie
Colin B. Mackay, Q.C.
Walter C. MacKenzie, M.D.
Right Reverend Malcolm A. MacLellan
Margaret Murray
Bruce Nodwell
Thomas H. Raddall
Group Captain Stefan Sznuk, C.B.E.
Maud Watt
William A. White
Ethel Wilson

PART V.—FEDERAL LEGISLATION, 1969-70

Successive issues of the Canada Year Book carry a continuous record of legislation passed by the Parliament of Canada. Listed here is legislation passed in the latter part of the First Session of the Twenty-eighth Parliament from May 9, 1969 to Oct. 22, 1969; in the Second Session from Oct. 23, 1969 to Oct. 7, 1970; and in the beginning of the Third Session from Oct. 8, 1970 to Dec. 18, 1970, when Parliament adjourned for Christmas recess. Naturally in summarizing material of this kind it is not possible to convey the full implication of a statute but only to give some indication of its content. The reader who is interested in any specific Act is referred to the *Statutes of Canada* in the given volume and chapter.

Legislation of the First Session of the Twenty-eighth Parliament, May 9, 1969 to Oct. 22, 1969*

Subject, Chapter and Date of Assent	Synopsis
17 Eliz. II	
Agriculture—	
50 June 27	*The Pest Control Products Act* updates the pest control legislation passed in 1939 by adding government authority to regulate the manufacture, handling, use and advertising of products used for the control of pests and the organic functions of plants and animals, and authority to regulate manufacturing establishments in regard to prescribed control products for export or interprovincial movement.
Finance—	
36 June 27	*Appropriation Act No. 3, 1969* (Main Supply) grants certain sums of money for the public service for the financial year ending Mar. 31, 1970.
Fisheries—	
40 June 27	*An Act to amend the Fisheries Improvement Loans Act* increases the maximum amount of loan to a fisherman from $10,000 to $25,000, establishes a new period during which loans made by banks and other lenders to fishermen may be guaranteed by the government, and limits the federal liability during that period to $10,000,000 for each type of lender.

* The First Session of the Twenty-eighth Parliament opened on Sept. 12, 1968; legislation passed and assented to between that date and May 8, 1969, is listed in the 1969 Canada Year Book at pp. 1272–1274.

Legislation of the First Session of the Twenty-eighth Parliament, May 9, 1969 to Oct. 22, 1969—continued

Subject, Chapter and Date of Assent	Synopsis
overnment—	
47 June 27	*The National Library Act* repeals the legislation under which the National Library previously functioned (RSC 1952, c. 330) and provides a new charter which will enable the Library to cope with current explosive library developments, to co-ordinate all federal library services and permit the development of a national network of library service. Reorganization of the National Library Advisory Council (as a Board) will enable it to give more adequate assistance to the National Librarian.
54 July 9	*The Official Languages Act* declares that the English and French languages are the official languages of Canada for all purposes of the Parliament and Government of Canada, and possess and enjoy equality of status and equal rights and privileges as to their use in all the institutions of the Parliament and Government of Canada.
stice—	
37 June 27	*An Act to amend the Criminal Code* makes it an indictable offence for a person to engage in the practice of placing or agreeing to place bets on behalf of another person for a consideration.
38 June 27	*The Criminal Law Amendment Act, 1968-69* makes major changes in criminal law and procedures, amending particularly the Criminal Code with respect to abortions, homosexuality, lotteries and impaired driving and also amending the Parole Act, the Penitentiary Act, and the Prisons and Reformatories Act; in addition, certain consequential amendments are made to the Combines Investigation Act, the Customs Tariff and the National Defence Act.
venue—	
44 June 27	*An Act to amend the Income Tax Act* implements certain approved budget proposals, the most important being those dealing with the taxation of life insurance companies and the establishment of a 2-p.c. social development tax to help finance health insurance services, welfare and post-secondary education costs, and social development payments to the provinces.
ade—	
39 June 27	*The Export Development Act* establishes the Export Development Corporation for the purposes of facilitating and developing trade between Canada and other countries by means of the financial and other powers provided in the Act. The authorized capital of the Corporation is $25,000,000.
42 June 27	*The Hazardous Products Act* prohibits the advertising, sale and importation of the hazardous products listed in the Schedule to the Act.
49 June 27	*An Act to amend the Patent Act, the Trade Marks Act and the Food and Drugs Act* extends the authority of the Commissioner of Patents to grant licences to manufacture medicines which would allow a more thorough sampling of drugs, to grant licences permitting the importation of prescription drugs on a more flexible basis and to grant interim licences under certain circumstances; the Governor in Council is authorized to make regulations respecting procedural matters in connection with such licences.
55 July 9	*An Act to amend the Patent Act* removes from the Act the provisions fixing the fees to be paid on the filing of applications or the taking of other proceedings under the Act and authorizes the making of rules respecting the fees that may be charged and their payment.
nsportation and Communications—	
51 June 27	*The Telesat Canada Act* authorizes the establishment of a Canadian corporation, the objects of which are to set up satellite telecommunication systems providing, on a commercial basis, telecommunication services between locations in Canada, utilizing to the extent practicable Canadian research, design and industrial personnel, technology and facilities.
52 July 9	*The Atlantic Region Freight Assistance Act* revises the Act to include assistance to truckers as well as to railway companies in respect of the movement of goods out of the Atlantic region; authorizes the variation or removal of certain statutory reductions in rail freight rates under the Maritime Freight Rates Act; provides for assistance, in due course, to carriers, shippers and consignees in the region; and makes other and related amendments to the above-mentioned Acts.
53 July 9	*An Act to amend the Canada Shipping Act* makes various adjustments including, among others, the first regulation of air-cushion vehicles on navigable waters; permission for landed immigrants to hold certificates as masters, mates and engineers on ships; subjection of ships of nine instead of fifteen tons gross and over to inspection requirements; instituting government control over pollution of waters by refuse from ships; and requiring all vessels in Canadian waters to be fitted with radio installations and provided with operators.

Legislation of the First Session of the Twenty-eighth Parliament, May 9, 1969 to Oct. 22, 1969—concluded

Subject, Chapter and Date of Assent	Synopsis
Miscellaneous—	
41 June 27	*An Act to amend the Food and Drugs Act and the Narcotic Control Act and to make a consequent amendment to the Criminal Code* prohibits the advertising of contraceptive devices a drugs to the general public except as authorized by regulation, and makes it an offen for any person, except under stipulated authority, to have a restricted drug in his p session or to traffic in it. Four drugs—LSD, DET, DMT and STP—are set out restricted drugs. Consequential changes are made to the Criminal Code.
43 June 27	*An Act to amend the Historic Sites and Monuments Act* provides for membership on t Historic Sites and Monuments Board of an officer of the National Museums of Cana and for adjustment of the amount of remuneration paid to Board members by removi the stipulated amount.
45 June 27	*An Act to amend the National Housing Act, 1954* removes the ceilings on NHA mortga interest rates; increases the maximum limits on funds the government can insure f NHA lending from $11,000,000,000 to $15,000,000,000; raises from $5,200,000,000 $6,100,000,000 the amount the federal treasury can lend through CMHC; lengthens fro 35 to 40 years the maximum life of new mortgages; extends loan qualifications to co dominiums, hostels and dormitories; cuts from 2 p.c. to 1 p.c. the insurance fees paid mortgage principal in monthly instalments; places more responsibility on CMHC h removing many clauses of the Act requiring Cabinet approval; and raises the amou that CMHC may spend on housing research and community planning.
46 June 27	*An Act to amend the National Housing Act, 1954* extends the forgiveness incentive featu of the sewage treatment loan provisions of the Act for five years to Mar. 31, 1975.
48 June 27	*The Oil and Gas Production and Conservation Act* provides for the control of oil and gas oper tions in the Yukon and Northwest Territories and the prevention of wastage and p lution.
56 July 9	*The Regional Development Incentives Act* authorizes the Government of Canada to devel incentives for the development of productive employment opportunities in regions d termined to require special measures to facilitate economic expansion and social adjus ment. The Governor in Council is authorized, after consultation with the province provinces concerned, to designate the regions to which such incentives will apply.

Legislation of the Second Session of the Twenty-eighth Parliament, Oct. 23, 1969 to Oct. 7, 1970

Subject, Chapter and Date of Assent	Synopsis
18 Eliz. II	
Agriculture—	
1969	
10 Dec. 19	*The Prairie Grain Provisional Payments Act, 1969-70* authorizes provisional payments f the 1969-70 crop year in respect of unthreshed grain in the Prairie Provinces; payment a producer shall not exceed $3,000 and the aggregate of such payment to a producer an advance payments made to him under the Prairie Grain Advance Payments Act sha not exceed $6,000.
1970	
23 Mar. 25	*An Act to amend the Agricultural Products Co-operative Marketing Act* amends the definitio of "agricultural product" to include wheat other than wheat that is grown in the are defined as the designated area by the Canadian Wheat Board Act.
Banking—	
1969	
11 Dec. 19	*An Act to amend Schedule A of the Bank Act* changes the alternate name of the Banqu Canadienne Nationale as it appears in Schedule A from "National Canadian Bank" t "Bank Canadian National".

Legislation of the Second Session of the Twenty-eighth Parliament, Oct. 23, 1969 to Oct. 7, 1970—continued

Subject, Chapter and Date of Assent			Synopsis
nking—concl.			
	1970		
19	Mar.	12	*An Act to amend the Quebec Savings Banks Act* permits that Bank to open branches anywhere within the Province of Quebec.
nsumer and Corporate Affairs—			
	1970		
34	Mar.	25	*The Textile Labelling Act* prohibits the sale, import or advertising of a prescribed consumer textile article unless the article has applied to it an approved label stating its textile fibre content.
48	June	26	*An Act to amend the Bills of Exchange Act* provides safeguards against fraud or unethical activity for a purchaser of consumer goods whose promissory note has been transferred to a sales finance company. Promissory notes attached to conditional sales contracts for consumer goods are required to be plainly marked "Consumer Purchase" and the purchaser now has a right of defence against a suit for non-payment if he can show that the original seller did not fulfil his part of the bargain. Postdated cheques drawn up more than 30 days in advance of payment date must also be so marked.
70	Oct.	7	*An Act to amend the Canada Corporations Act and other statutory provisions related to the subject matter of certain of those amendments;* the amendments relate to the administration of the Act, more particularly to provide for the payment of expenses incurred with respect to the investigation of the affairs of companies, and increase the membership of the Restrictive Trade Practices Commission from three to four.
73	Oct.	7	*The Standards Council of Canada Act* provides for the establishment of a Standards Council of Canada, the objects of which are to foster and promote in Canada the voluntary standardization of weights and measures, quality and performance of goods and industrial and commercial methods and practices.
nance—			
	1969		
2	Dec.	19	*Appropriation Act No. 4, 1969* grants certain sums of money for the public service for the financial year ending Mar. 31, 1970.
	1970		
21	Mar.	12	*An Act to amend the Small Businesses Loan Act* increases the limit of liability of the Minister of Finance in respect of loans made by individual lenders to encourage lending by small-volume lenders, extends the loan period to June 30, 1971, and sets the principal amount of guaranteed loans made during that period at not more than $100,000,000 on loans by chartered banks and $50,000,000 on loans by other lending institutions.
24	Mar.	25	*Appropriation Act No. 1, 1970* grants certain sums of money for the public service for the financial year ending Mar. 31, 1970.
25	Mar.	25	*Appropriation Act No. 2, 1970* grants certain sums of money for the public service for the financial year ending Mar. 31, 1971.
26	Mar.	25	*An Act to amend the Cape Breton Development Corporation Act* authorizes the Corporation to guarantee, up to the aggregate amount of $100,000,000, repayment of money borrowed by companies and persons that are considered likely to make substantial contributions to the industrial development of Cape Breton Island and to guarantee the payment of interest on such borrowed money.
46	June	26	*Appropriation Act No. 3, 1970* grants certain sums of money for the public service for the financial year ending Mar. 31, 1971.
heries and Water Resources—			
	1970		
27	Mar.	25	*An Act to amend the Coastal Fisheries Protection Act* extends the provisions of the Act to include the service and supply vessels attached to foreign fleets fishing in Canadian waters.
28	Mar.	25	*An Act to repeal the Deep Sea Fisheries Act;* the payment of bounties to fishermen as authorized by that Act is discontinued as no longer appropriate.

Legislation of the Second Session of the Twenty-eighth Parliament, Oct. 23, 1969 to Oct. 7, 1970—continued

Subject, Chapter and Date of Assent			Synopsis
Fisheries and Water Resources—concl.			
32	Mar.	25	*The Saltfish Act* authorizes the establishment of the Canadian Saltfish Corporation and the regulation of interprovincial and export trade in saltfish to improve the earnings of primary producers of cured cod fish. Aggregate government loans or guarantee of borrowings may not exceed $10,000,000.
47	June	26	*The Arctic Waters Pollution Prevention Act* is enacted for the purpose of preventing pollution of areas of the arctic waters adjacent to the mainland and islands of the Canadian arctic; it declares Canadian jurisdiction over pollution control up to 100 nautical miles from land and provides for fines of up to $100,000 for dumping waste on arctic islands, in the water, or on the mainland.
52	June	26	*The Canada Water Act* provides for the management of the water resources of Canada, including research and the planning and implementation of programs relating to water conservation, development and utilization.
63	June	26	*An Act to amend the Fisheries Act* authorizes the establishment of national standards of water purity and gives the Department of Fisheries and Forestry new powers to prevent industrial pollution of Canadian waters except for areas covered by other anti-pollution legislation; construction of a plant that has not complied with orders by the Department on pollution safeguards may be halted and fine limits are raised to $5,000 from $1,000 with provision for daily fines of $5,000 where anti-pollution regulations are ignored.
66	June	26	*The Northern Inland Waters Act* provides for the equitable sharing of rights to use water in the Canadian North among interests with legitimate claims on such use; ensures that the allocation of water rights is consistent with immediate and long-term regional and national interests; ensures that all undertakings planned for the use, diversion, storage or treatment of water meet acceptable engineering standards; and ensures that water users maintain or restore its quality to acceptable standards before returning it to its natural environment.
68	June	26	*An Act to amend the Territorial Sea and Fishing Zones Act* establishes the territorial sea of Canada at 12 miles in substitution for the previous limit of three miles, thus eliminating the previous nine-mile fishing zone which becomes incorporated within the 12-mile territorial sea, and authorizes the creation of exclusive Canadian fishing zones comprising areas of the sea adjacent to the coast of Canada.
Government—			
1970			
33	Mar.	25	*The Statute Law (Supplementary Retirement Benefits) Amendment Act, 1970* provides supplementary benefits for certain persons in receipt of pensions payable out of the Consolidated Revenue Fund and amends certain Acts that provide for the payment of those pensions.
36	Mar.	25	*The International Development Research Centre Act* authorizes the establishment of an International Development Research Centre of Canada and provides for its administration and financial structure; the objects of the Centre are to initiate, encourage, support and conduct research into the problems of the economically underdeveloped regions of the world.
41	June	11	*The Expropriation Act* relates to the expropriation of land to provide for the acquisition and abandonment of land by the Crown in the right of Canada; for the appointment, remuneration and expenses of hearing officers and of negotiators; and for the payment of compensation, interest and costs.
49	June	26	*The Canada Elections Act* replaces the Canada Elections Act 1960 respecting the franchise of electors and the election of members of the House of Commons; it incorporates amendments approved by the Standing Committee on Privileges and Elections presented to the House of Commons on Mar. 19, 1970, which had the general purpose of facilitating the administration of the electoral process.
53	June	26	*An Act respecting the Electoral Boundaries Readjustment Act* changes the name of the electoral district of "Perth" to that of "Perth-Wilmot".
54	June	26	*An Act respecting the Electoral Boundaries Readjustment Act* changes the name of the electoral district of "Sarnia" to that of "Sarnia-Lambton".
55	June	26	*An Act respecting the Electoral Boundaries Readjustment Act* changes the name of the electoral district of "Burnaby-Richmond" to that of "Burnaby-Richmond-Delta".

Legislation of the Second Session of the Twenty-eighth Parliament, Oct. 23, 1969 to Oct. 7, 1970—continued

Subject, Chapter and Date of Assent	Synopsis
overnment—concl.	
56 June 26	*An Act respecting the Electoral Boundaries Readjustment Act* changes the name of the electoral district of "Glengarry-Prescott" to that of "Glengarry-Prescott-Russell".
57 June 26	*An Act respecting the Electoral Boundaries Readjustment Act* changes the name of the electoral district of "Missisquoi" to that of "Brome-Missisquoi".
58 June 26	*An Act respecting the Electoral Boundaries Readjustment Act* changes the name of the electoral district of "Wellington-Grey" to that of "Wellington-Grey-Dufferin-Waterloo".
59 June 26	*An Act respecting the Electoral Boundaries Readjustment Act* changes the name of the electoral district of "Maisonneuve" to that of "Maisonneuve-Rosemont".
60 June 26	*An Act respecting the Electoral Boundaries Readjustment Act* changes the name of the electoral district of "Argenteuil" to that of "Argenteuil-Deux Montagnes".
61 June 26	*An Act respecting the Electoral Boundaries Readjustment Act* changes the name of the electoral district of "Lanark and Renfrew" to that of "Lanark-Renfrew-Carleton".
69 June 26	*An Act to amend the Yukon Act, the Northwest Territories Act and the Territorial Lands Act* makes changes respecting the payment of indemnities and expenses to the members of the Councils of these Territories; broadens the powers of the Commissioners in Council respecting the administration of justice and prisons; increases the size of the respective Councils and the number of members elected thereto; permits the appropriation and surface control of territorial lands as land management zones; and makes certain changes in connection with the administration of the Act.
surance, Loan nd Trust Companies—	
1970	
14 Mar. 12	*An Act to amend the Canadian and British Insurance Companies Act and other statutory provisions related to the subject matter of certain of those amendments* makes certain main changes with respect to a letters patent system of incorporating companies and amending existing charters, a better and more flexible system of controlling companies in financial difficulty, an extension of prohibitions against investments and loans where conflict of interest may exist, and an expansion of investment powers, as well as technical and administrative amendments.
16 Mar. 12	*An Act to amend the Foreign Insurance Companies Act* provides a better and more flexible system of controlling the Canadian operations of foreign insurance companies doing business in Canada and makes certain technical and administrative amendments.
17 Mar. 12	*An Act to amend the Loan Companies Act* makes certain main changes with respect to a letters patent system of incorporating companies and amending existing charters, a better and more flexible system of controlling companies in financial difficulty, an extension of prohibitions against investments and loans where conflict of interest may exist, and an expansion of investment and borrowing powers, as well as technical and administrative amendments.
22 Mar. 12	*An Act to amend the Trust Companies Act* makes certain main changes with respect to a letters patent system of incorporating companies and amending existing charters, a better and more flexible system of controlling companies in financial difficulty, an extension of prohibitions against investments and loans where conflict of interest may exist, and an expansion of investment and borrowing powers, as well as technical and administrative amendments.
tice—	
1969	
9 Dec. 19	*An Act to amend the Judges Act* authorizes the provision of salaries for eight additional judges.
1970	
31 Mar. 25	*An Act to amend the Parole Act* clarifies the section relating to times of commencement and expiration of imprisonment where consecutive and concurrent sentences exist, and the effect of forfeiture of parole on term of imprisonment.
39 June 11	*An Act to amend the Criminal Code* gives effect to the recommendations contained in the report of a Special Committee appointed in 1965 to study the problems related to the dissemination of varieties of "hate propaganda" in Canada.

Legislation of the Second Session of the Twenty-eighth Parliament, Oct. 23, 1969 to Oct. 7, 1970—continued

Subject, Chapter and Date of Assent	Synopsis
Justice—concl.	
40 June 11	*The Criminal Records Act* provides for the relief of persons who have been convicted o offences and have subsequently rehabilitated themselves. A convicted person ma apply for a pardon five years after the completion of his sentence; if granted, records o the criminal proceedings will be sealed, to be opened only under certain limited condi tions.
44 June 11	*An Act to amend the Supreme Court Act* makes amendments respecting appeals, which wil expedite the business of the Court.
64 June 26	*The Law Reform Commission Act* authorizes the establishment of a commission for th reform of the laws of Canada.
Mining—	
1970	
29 Mar. 25	*The Dominion Coal Board Dissolution Act* provides for the dissolution of the Dominion Coa Board and for the repeal of the Canadian Coal Equality Act, the Coal Production As sistance Act and the Dominion Coal Board Act.
38 May 13	*An Act to amend the Yukon Placer Mining Act* relates to the locating of placer mining claims in Yukon Territory.
43 June 11	*An Act to amend the Oil and Gas Production and Conservation Act* extends the provisions o the Act to oil and gas in areas beyond the Territories that do not lie within the geograph ical limits or under the administrative control of any one of the ten provinces and make it clear that off-shore installations and vessels are included in the definition of pipeline the Act gives effect to the division of administrative responsibility for the resources t which the Act applies between the Minister of Indian Affairs and Northern Develop ment and the Minister of Energy, Mines and Resources.
Revenue—	
1969	
6 Dec. 19	*An Act to amend the Customs Tariff and to make a consequential amendment to the Excise Ta Act* approves an advanced schedule of tariff reductions proposed in the Budget of June 3 1969; reductions that were to have come into effect Jan. 1, 1972 as agreed under the Ken nedy Round negotiations came into effect June 4, 1969.
7 Dec. 19	*An Act to amend the Excise Tax Act* authorizes the imposition of an air transportation tax of two kinds—an *ad valorem* tax for air transportation within the area defined as the "taxation area", and a flat dollar tax for air transportation out of Canada to points not within the taxation area.
8 Dec. 19	*An Act to amend an Act to amend the Income Tax Act* extends, to cover the taxation year 1970, the 3-p.c. surtax on individual and corporation income tax.
1970	
13 Mar. 12	*The Canada-Sweden Supplementary Income Tax Agreement Act, 1969* implements an agree ment between the two countries for the purpose of avoiding double taxation, signed Jan. 21, 1966.
62 June 26	*An Act to amend the Excise Act* relates to certain alcoholic beverages and cigarettes.
Transportation—	
1969	
3 Dec. 19	*An Act to authorize the provision of moneys to meet certain capital expenditures of the Canadian National Railway System and Air Canada for the period from the 1st day of January, 1969, to the 30th day of June, 1970, and to authorize the guarantee by Her Majesty of certain securities to be issued by the Canadian National Railway Company and certain debentures to be issued by Air Canada.*
1970	
20 Mar. 12	*An Act to amend the Railway Act* extends the authority of the Canadian Transport Com mission to regulate and set the tolls charged by the telegraph or telephone companies to private wire services.
30 Mar. 25	*The Motor Vehicle Safety Act* sets out regulations respecting the use of national safety marks in relation to motor vehicles and provides for safety standards for certain motor ve hicles imported into or exported from Canada or sent or conveyed from one province to another.
35 May 13	*An Act to amend the Canada Shipping Act* relates to the provision of medical and hospital services to crew members of vessels of foreign registry and to crew members of Cana dian fishing vessels.

Legislation of the Second Session of the Twenty-eighth Parliament, Oct. 23, 1969 to Oct. 7, 1970—concluded

Subject, Chapter and Date of Assent	Synopsis
ransportation— concluded	
45 June 26	*An Act respecting regulations made pursuant to section 4 of the Aeronautics Act* clarifies the validity of certain regulations and of orders, directions and documents made under authority of such regulations.
51 June 26	*An Act to postpone the expiration of certain provisions of An Act to amend the Canada Shipping Act* refers to the section of the Act relating to by-laws and orders respecting pilotage which was to have expired on June 30, 1970; the latest expiration date is now June 30, 1971.
72 Oct. 7	*The Shipping Conferences Exemption Act* exempts certain conference practices from the provisions of the Combines Investigation Act.
iscellaneous—	
1969	
1 Nov. 27	*The Expo Winding-up Act* provides for the dissolution of the Canadian Corporation for the 1967 World Exhibition and the disposition of its remaining assets and liabilities, the writing-off of $125,000,000 representing Canada's share of the Corporation deficit and the deferral to 1972 of Quebec's obligation of $5,500,000.
4 Dec. 19	*An Act to amend the Children of War Dead (Education Assistance) Act* confers eligibility for educational assistance on a group of children receiving compassionate pensions under the Pension Act whose eligibility for assistance was previously limited, and adapts the Act to changing practices in the higher education system.
5 Dec. 19	*An Act to amend the Company of Young Canadians Act* provides for the appointment by the Governor in Council of a Comptroller of the Company, whose approval is necessary for the payment of any money by the Company and for the entering into of any contract or other arrangement involving the payment of money; employees of the Company are required to provide the Comptroller with any information he deems necessary for the carrying out of his duties.
1970	
12 Mar. 12	*An Act to amend the Canada Student Loans Act* sets the supplementary allocation for a province at 30 p.c. of the basic loan provision; increases to $115,000,000 the basic loan provision for the year commencing July 1, 1970, in line with the increase in the post-secondary student population; broadens the classes of lending institutions to which a student can apply for loans; and makes certain administrative changes.
15 Mar. 12	*An Act to amend the Company of Young Canadians Act* reduces the number of members of the Council of the Company and states that they are all to be appointed by the Governor in Council and that the Executive Director of the Council is responsible for the supervision of the volunteer-members of the Company as well as its staff; the objects of the Company are restricted to programs in Canada.
18 Mar. 12	*The Quarantine Act* is a revision of existing legislation respecting the introduction into Canada of infectious or contagious diseases.
37 May 13	*The Radiation Emitting Devices Act* prohibits the sale, lease or importation into Canada of any radiation-emitting device of a class for which standards have been prescribed unless the device and its components comply with those standards.
42 June 11	*An Act to amend the Industrial Research and Development Incentives Act* does not change the purposes of the Act but makes technical changes to remove certain anomalies in its provisions.
50 June 26	*An Act to amend the Canada Labour (Standards) Code* increases the minimum wage from $1.25 an hour to $1.65 an hour, effective July 1, 1970.
65 June 26	*An Act to amend the National Energy Board Act* increases the membership of the Board from five to seven, provides for their minimum salaries and for the appointment of an Associate Vice-Chairman of the Board, changes the method of appointing the Board's Secretary and fixing his term of employment, and makes other administrative changes.
67 June 26	*The Nuclear Liability Act* relates to civil liability for nuclear damage, providing special measures for compensation and for the establishment of a Nuclear Damage Claims Commission to deal with claims.
71 Oct. 7	*The Hudson's Bay Company Act* officially implements the transfer of the Company's head office to Winnipeg from London, England; from the date that supplementary letters patent granted by Her Majesty in the Right of Canada and in the Right of the United Kingdom amended its Charter for the purpose of so doing, the Company is continued as a body corporate and politic incorporated in Canada.

Legislation of the Third Session of the Twenty-eighth Parliament, Oct. 8, 1970 to Dec. 3, 1970

Chapter and Date of Assent	Synopsis
1 Dec. 3	*The Federal Court Act* continues the court of law, equity and administration in and fo Canada, previously existing under the name of the Exchequer Court of Canada, unde the name of the Federal Court of Canada with a fundamental change in the court struc ture, and sets out its constitution, jurisdiction, administration, etc.
2 Dec. 3	*The Public Order (Temporary Measures) Act, 1970* provides temporary emergency power for the preservation of public order in Canada; this Act expires on Apr. 30, 1971, or on suc earlier day as may be fixed by proclamation unless before that day both Houses of Par liament, by joint resolution, direct that it shall continue until a day specified in th resolution.

PART VI.—CANADIAN CHRONOLOGY

Events in the general chronology from 1497 to 1866 are given in the 1951 Year Book, pp. 46-49; from 1867 to 1953 in the 1954 Year Book, pp. 1259-1264; and annually from that year in successive editions. A reprint entitled *Canadian Chronology, 1497-1960* is also available from the Dominion Bureau of Statistics. The following listing covers the period May 1, 1969 to Dec. 31, 1970 and it should be mentioned that certain of the dates given therein are approximate. The publication *Canadian News Facts,* Toronto, has been very valuable in the preparation of this chronology. References regarding changes in federal and provincial legislatures or ministries are not included but may be found in Chapter II on Constitution and Government or in the Appendix.

1969

May: *May 1,* Judge Lucien Coe Kurata removed from the Bench by the provincial Cabinet following Ontario Supreme Court finding that he was unfit to serve by reason of misbehaviour. *May 2,* Agreement completed between the Federal Government and the Trans-Canada Telephone System for the establishment of a communications satellite, *Telesat Canada.* Commercial and industrial construction contractors in Toronto locked out members of 14 building trades unions, following a strike May 1 by 3,000 members of the International Brotherhood of Electrical Workers who rejected the wage increase offered. National Indian Conference announced establishment of a six-member committee to define Indian rights and advise the Government of desirable changes in the Indian Act; accepted by Indian Affairs and Northern Development Minister Chrétien. Death in Montreal of Donald Gordon, age 67, former President of Canadian National Railways. *May 3,* 95th Kentucky Derby won by Majestic Prince owned by Frank McMahon of Vancouver and Calgary. *May 4,* Montreal Canadiens won the Stanley Cup, symbol of hockey supremacy, for the 16th time, in playoff with the St. Louis Blues. The Federal Government prohibited fishing in Placentia Bay, Nfld., and banned the export of fish from that area because of pollution suspected of being caused by the release of waste from the plant of Electrolytic Reduction Co. of Canada. *May 6,* Dr. Léo Marion, Dean of Pure and Applied Sciences, Ottawa University, named winner of the Chemical Institute of Canada Montreal Medal for significant leadership in the chemistry profession. The Governor General's Literary Award to Leonard Cohen for English language poetry, announced Apr. 21, declined by the author. *May 7,* The CBC announced the removal of all tobacco advertising from its radio and television networks. *May 8,* Plans to establish in Canso, N.S., the world's first commercial plant to produce high-purity fish protein announced; considered by nutritionists as a major breakthrough in solving world shortage of protein. Mrs. C. H. A. Armstrong, Toronto, elected President of the Victorian Order of Nurses for Canada, the second woman President since its founding in 1871 when it was presided over by Lady Aberdeen, wife of the then Governor General. *May 11,* Death in Toronto of Kenneth L. Carter, Chairman of the Royal Commission on Taxation. *May 12,* Report of the federal task force on sport tabled in the House of Commons. International Joint Commission proposal that specific standards be established for control of pollution of the Red River accepted by Canadian and U.S. Governments. *May 19,* The 6,300-member Air Canada unit of the International Association of Machinists, on strike for a month, accepted a settlement giving an increase in wages of 16 p.c. over 26 months and other benefits. *May 21,* 34 distinguished Canadians elected Fellows of the Royal Society of Canada. Major amendments to the Ontario Highway Traffic Act of Ontario, increasing both fines and jail sentences, approved by the Legislature. The Federal and Quebec Governments announced agreement for the establishment of the first national park in Quebec, to be located in the Gaspé region. Death in Cannes, France, of Pierre Dupuy, former Canadian Ambassador to France and Commissioner-General of Expo 67. *May 26,* U.S. spacecraft *Apollo 10* completed an eight-day mission, successfully performing manoeuvres preliminary to a

noon landing in July. 31 students arrested following the February riots at Sir George Williams University committed to trial. *May 28*, Alberta Resources Railway, a 235-mile line from Grande Prairie north to Solomon, officially opened by Premier Strom. *May 29*, Establishment of federal Commission of Inquiry into the non-medical use of certain drugs and substances; Gerald LeDain, Chief Commissioner. *May 30*, The parents of six juveniles convicted of mischief in the Sir George Williams University computer centre lost their appeals against the imposition of $250 fines for neglecting to exercise due care of their children. *May 31*, National Arts Centre in Ottawa officially opened by Prime Minister Trudeau.

June: *June 3*, Dr. W. G. Schneider, President, National Research Council, and Dr. J. A. Jeletsky, Geological Survey of Canada, awarded medals of the Royal Society of Canada for exceptional work in their respective fields of science. Finance Minister Benson announced Canada's agreement to the immediate application of all Kennedy Round tariff cuts, with one exception. *June 4*, Prime Minister Robarts of Ontario and Prime Minister Bertrand of Quebec signed historic agreement establishing a permanent Commission for Ontario-Quebec Co-operation to provide public services in the English and French languages and education to minority language groups wherever feasible, and to implement an exchange program between public servants. Defence Minister Léo Cadieux confirmed the taking over by Canada of responsibility for the defence of additional Canadian territory, following the closing in September of a North American Air Defence Command 375,000-sq. mile region now under U.S. command. *June 6*, Ceremonies held at the military cemetery at Beny-sur-Mer in France where 2,048 Canadian soldiers lie buried overlooking the beaches where they landed on D-day 25 years ago. *June 9*, Premier Bennett of British Columbia officially dedicated the Keenleyside Dam on the Columbia River, named in honour of Dr. Hugh Keenleyside, retiring co-Chairman of the B.C. Hydro and Power Authority. *June 11-12*, Third Federal-Provincial Constitutional Conference held in Ottawa; the meeting was closed to the press and public for the first time; general agreement reached permitting the provinces to block federal spending in provincial areas of jurisdiction and granting the provinces access to all fields of taxation. *June 12*, Death in Ottawa of Senator Clement Augustus O'Leary of Nova Scotia. *June 12-13*, Canadian Special Olympics for the Mentally Retarded, sponsored by the Canadian Progress Club and aided by outstanding Canadian and U.S. athletes, held in Toronto; Mrs. Joseph Kennedy, mother of the late President John F. Kennedy and Senator Robert Kennedy, represented the Kennedy Foundation which supported the event. *June 15*, Georges Pompidou elected President of France, succeeding General Charles de Gaulle. *June 16*, Death in London, England, of Field Marshal Earl Alexander of Tunis, leader of the Allied Armies in North Africa and Italy during World War II, and former Governor General of Canada. *June 17*, The 1970 Canadian dollar coin to feature Manitoba's floral emblem, the crocus, in commemoration of the province's 100th anniversary. *June 19*, Establishment of Prices and Incomes Commission to inquire into the causes and consequences of inflation and suggest measures for stabilizing prices. *June 21*, The Queen's Plate, Canadian thoroughbred classic at Woodbine race track, won by Jumpin Joseph, owned by Warren Beasley of Toronto. Announcement of the discovery in Banff National Park of more than 150 tools and weapons, some apparently used 10,000 years ago to hunt mammoths. *June 23*, Defence Minister Léo Cadieux announced the reduction of Canadian Armed Forces to a strength of 80,000-to-85,000 from the present 98,000 by 1972. *June 25*, A report on Indian policy tabled in the House of Commons recommended full citizenship for Indians, abolition of Indian treaties and assumption of control of reserves by Indians, as well as financial assistance during the transitional period. General Election held in Manitoba; the National Democratic Party led by Edward Schreyer defeated the Progressive Conservative Party led by Premier Weir, winning 28 of 57 seats, making it the first socialist government in the province's history and the only one currently in power in North America. *June 26*, An abridged report of the Royal Commission to inquire into the operation of Canadian Security methods and procedures, appointed Nov. 16, 1966, tabled in the House of Commons; recommendations include the revamping of the RCMP Directorate of Security and Intelligence; formation of an independent review board to hear complaints relating to security decisions, establishment of a security secretariat to formulate policy and procedures, etc. *June 27*, U.S. President Nixon visited the Place des Nations at Man and His World in Montreal in commemoration of the 10th anniversary of the St. Lawrence Seaway.

July: *July 1*, 102nd anniversary of Canadian Confederation observed on Parliament Hill by an interfaith religious celebration. H.R.H. Prince Charles invested at Caernarvon Castle as Prince of Wales. *July 2*, The first college of veterinary medicine in Western Canada opened at the University of Saskatchewan by Premier Ross Thatcher. The Governments of Quebec and Gabon signed their "first entente of co-operation", a small teacher-student exchange. Nine-day visit to Canada by six Soviet Union officials concluded; first political visit from that country since Canada's censure of its invasion of Czechoslovakia Aug. 21, 1968. *July 3*, The "Newfie Bullet" completed her last 548-mile run across Newfoundland, ending a service started in 1898. Clifford S. Malone, an honorary governor of the Montreal Stock Exchange, appointed ombudsman over exchange activities. *July 4*, Death sentence of Leonard Otto Borg for the murder of an RCMP corporal June 23, 1967, commuted to life imprisonment. *July 5*, Tom Mboya, Minister of Planning and Economic Development in the Kenya Government and a figure of international stature, killed by an assassin's bullet in Nairobi. *July 6*, Death in Rivière-du-Loup of Senator Jean-François Pouliot, ending a 44-year career as Member of Parliament and Senator. The Canadian icebreaker CGS *John A. Macdonald* left Dartmouth, N.S., to assist the U.S. tanker *Manhattan* in its attempt to navigate the Northwest Passage and test the feasibility of carrying crude oil from Alaska to American east coast ports. *July 9*, Federal legislation making English and French the official languages of the federal administration and creating bilingual districts in all provinces except Newfoundland and British Columbia received Royal Assent. Amendments to the Canada Shipping Act passed in the House of Commons allowing regulation of air-cushion vehicles on navigable waters and giving Parliament control over pollution by oil, chemicals, garbage and sewage. *July 10*, the CNTU and the QFL signed an agreement with employer associations in the construction industry, ending a strike begun May 12, characterized by demands for higher pay and increased job security and by a series of bombing incidents July 7-9 in Montreal and Quebec. Nearly 17,200 members of the United Steel Workers of America began a long "work stoppage" against plants of Inco in Sudbury and Port Colborne, Ont., resulting in a world shortage of nickel and an increase in the price of nickel in London, England. Report of a five-man committee of outside university professors investigating charges of racism against Professor Perry Anderson that precipitated the damage to the computer at Sir George Williams University cleared Prof. Anderson. *July 11*, Ontario Government announced

stringent regulations to control pollution from iron foundries, oil refineries and automobile and diesel exhaust and water pollution from dumping human waste from pleasure craft. Death in Edmonton of Mr. Justice John Howard Sissons, the first judge of the Northwest Territories Court and highly esteemed by the Eskimos who called him Ekoktoegee, "the one who listens". *July 13*, Soviet Union launched an unmanned spacecraft toward the moon. *July 14-16*, Prime Minister Trudeau confronted in Winnipeg and harassed in Regina by angry farmers protesting low cash incomes because of slow wheat sales; tractor demonstrations on the highways of the Prairie Provinces continued the protests. *July 16-24*, U.S. spacecraft *Apollo 11*, launched on July 16, set down on moon surface at 4:18 p.m., July 20; Neil A. Armstrong was first to walk on the moon. *July 19*, Prime Minister Trudeau announced in Lethbridge, Alta., that interest-free advance cash payments to Western wheat farmers for farm-stored grain to the amount of $250,000,000 would begin Aug. 1. *July 21*, Death in Ottawa of Dana L. Wilgress, Canadian diplomat and public servant for 44 years. Department of External Affairs announced a grant of $25,000 to the provisional secretariat of the Francophone International Co-operation Agency, established Feb. 17 at a 23-member conference of French-language nations in Naimey, Africa. *July 23*, Governments of Saskatchewan and New Brunswick announced increases in minimum wages, the former by 20 cents an hour, effective Oct. 1, to $1.25 for city workers and to $1.15 for rural workers and the latter from $1 to $1.25 an hour for employees in the trades, food processing, manufacturing and service industries. *July 24*, 18 of 30 persons arrested during the rioting in Montreal on St. Jean Baptiste Day in 1968 convicted and sentenced to jail terms of up to four months and fined $200 each. *July 25*, Two "landmark" Bills passed by Parliament—the omnibus Bill amending the Criminal Code and the Official Languages Act declaring English and French to be the official languages in Canada and providing for services in both languages to the public. After bitter opposition, closure imposed in the House of Commons to force passage of the proposed rule of procedure giving the Government power to control debate time without Opposition consent. *July 30*, Trent University, Peterborough, Ont., announced Canada's first three-year degree course in Indian studies, to begin in autumn 1969.

August: *Aug. 1*, Premier Thatcher of Saskatchewan announced that feed grain would be accepted in payment of university tuition for children of Saskatchewan farmers. *Aug. 2*, Death in Winnipeg of Senator Gunnar Thorvaldson of Manitoba. *Aug. 3*, A Canairelief aircraft crashed in Biafra during a mercy flight, killing four Canadians and bringing to about 20 the number of flyers killed while flying emergency supplies. *Aug. 4-5*, Tenth annual conference of provincial premiers held in Quebec, Que.; pollution, urban affairs and Indian affairs were discussed but discussion of tax reform and the report of the Carter Royal Commission was deferred. *Aug. 5*, Completion of a series of topographical maps, 918 in all, covering Canada on a four-miles-to-the-inch scale, announced by the Department of Energy, Mines and Resources. *Aug. 7*, Regional Economic Expansion Minister Marchand announced creation of new designated regions across Canada replacing smaller areas that qualified for assistance under the Area Development Agency. Fernand Michon of Longueuil, named Quebec's first "Worker of the Year", for designing special tools used in making the lunar module landing legs for U.S. *Apollo 11*. *Aug. 9*, Opening by Indian Affairs and Northern Development Minister Chrétien of Kejimkujik Park in Nova Scotia. *Aug. 11*, Housing program in Quebec launched with the formal signing of $250,000,000 loan agreement with the Federal Government. *Aug. 13*, Report of the Quebec Royal Commis on the Administration of Justice, headed by Ju Yves Prevost, presented to the Quebec Gov ment; recommendations covered fraudulent ba ruptcies, armed robberies and other topics. M ister of Defence Léo Cadieux announced the sure of the military base at Clinton, Ont., supply depots at London and Cobourg, Ont., Ville LaSalle, Montreal, and a substantial reduc in the operations at St. Hubert, Que. Pr Minister Trudeau announced freeze on governn expenditures in an attempt to halt the federal tribution to inflation. *Aug. 15*, Dismissal of troversial lecturer Stanley Gray from McGill U versity for participating in disruptive activities campus. *Aug. 16-24*, First Canada Summer Ga held at Halifax–Dartmouth; representatives of provinces and territories participated. *Aug.* The world's longest living heart transplant pati Dr. Philip Blaiberg, died in Cape Town, So Africa. *Aug. 22*, Quebec Government announ extensive measures to be taken by the police fo of Quebec City and Montreal, the provincial po and the RCMP in a campaign against terro activites in the province. *Aug. 24*, U.S. oil tan SS *Manhattan* left Chester, Pa.; it arrived at Sa Harbour, N.W.T., Sept. 15 after sailing thro the Northwest Passage. *Aug. 25*, Hon. Otto La Minister in charge of Energy, Mines and Resour announced federal plans for a concentrated eff to curb water pollution, the establishment federal-provincial water management boards a heavy fines for non-compliance with regulatio *Aug. 27*, General Election held in British Columb Social Credit government under Premier Benn returned to power; party standing—39 So Credit, 11 New Democratic and 5 Liberal. *A 28*, Under legislation strongly opposed by unions, the British Columbia Government orde compulsory mediation in the strike of 550 oil wo ers employed by six companies. *Aug. 29*, Agr ment reached between the Quebec Governm and school board negotiators and 70,000 elementa and high school teachers ended a two-year disp characterized by strikes, lockouts, resignations a a protest march.

September: *Sept. 4*, Manitoba Government a nounced reduction of medical care premiums about 88 p.c. effective Nov. 1, to be raised by tax tion; regarded as more equitable in that the form method did not take ability to pay into consider tion. *Sept. 8*, Resignation of Stanley Burke, CI news broadcaster, to work for the end of the Nig ian civil war. Death in Unionville, Ont., of art Frederick Horsman Varley, age 88, a member a a founder of the Canadian Group of Seven. *Se 10*, Riot Act read following demonstrations French-speaking youths in St. Leonard, a subu of Montreal, in the second incident of violence eight days over school rights involving the Engli language; Raymond Lemieux, President of t Ligue pour l'intégration scolaire, which favour teaching in French only, arrested. *Sept. 11*, Fo mal opening of the college for advanced aerospa studies on the testing range of the Space Resear Institute Inc. straddling the Canada–U.S. bord at Highwater, Que., and North Troy, Vermon *Sept. 12*, Death in Ottawa of General Charles Fo kes, leader of the Canadian World War II forces Europe and former Chairman of the National D fence Chiefs of Staff Committee. *Sept. 12-1* Arrest of six Toronto men charged with kidnappi of Mrs. Mary Nelles, and recovery of $200,000 ra som. *Sept. 14*, Dr. Gustave Gingras, Director the Rehabilitation Centre of Montreal, named co-winner of the Albert Lasker prize in medicin one of the world's foremost honours for work wi the handicapped. *Sept. 15*, Manitoba Gover ment announced the reversal of its earlier decisio to divert the Churchill River, a plan to extend t province's hydro resources that would have flood

Southern Indian Lake and displaced about 700 people. The Protestant School Board of Greater Montreal assured the St. Leonard Parents' Association that English-language schooling would be provided for about 330 Catholic pupils in grades 1 and 2 in Protestant schools in Montreal North and Rosemount. Sixth Annual Review of the Economic Council of Canada made public; it stressed the need for proper measures to combat inflation, creation of a federal-provincial program for continuing studies of national goals, and suggested that all levels of government endeavour to eliminate completed programs. Settlement of the dispute between school board and teachers in Sydney, N.S., that kept 10,000 school children out of school for nine days. *Sept. 16*, Sale announced of a $35,000,000 nuclear research reactor to the Chinese Atomic Energy Council in Taiwan by Atomic Energy of Canada Ltd.; to be used for peaceful purposes only. *Sept. 18*, Rt. Hon. John G. Diefenbaker presented in Winnipeg with the human relations award of the Canadian National Council of Christians and Jews for his advocacy of civil liberty and human rights. *Sept. 19*, Committee of Presidents of Universities of Ontario reported a decision that students found guilty of violence or obstruction on their campuses will be liable for expulsion but that protests may be made in a legitimate manner. Defence Minister Léo Cadieux announced reorganization of the Canadian Armed Forces, to include the reduction of NATO manpower contributions by about 50 p.c., the early retirement of aircraft carrier, HMCS *Bonaventure*, and removal of three infantry regiments—the Canadian Guards, the Queen's Own Rifles of Canada and the Black Watch (Royal Highland Regiment) of Canada—from the regular force. *Sept. 22*, Saskatchewan adopted an official flag—the upper half green signifying northern woodlands, the lower half yellow signifying wheat fields, superimposed by the provincial flower, the prairie lily, and by the provincial coat-of-arms. The highest mountain in the Canadian Arctic (8,760 feet) on Ellesmere Island, named after the late Dr. Marius Barbeau, Canadian anthropologist and researcher into Indian and Eskimo cultures. *Sept. 22-23*, Prime Minister Keith Holyoake of New Zealand visited Ottawa for talks with Canadian officials. *Sept. 23*, Third volume of the Report of the Royal Commission on Pilotage, established in 1962, released; recommendations were made regarding Atlantic ports, particularly the port at Saint John, N.B. Boycott of schools in St. Leonard by children of immigrants ended in commencement of attendance at two Protestant schools. *Sept. 24*, Health Minister Wells of Ontario announced ban on the use of the insecticide DDT in the province, effective Jan. 1, 1970; to be retained only in a few special cases and sold under permit only. *Sept. 26*, The Hydro-Quebec dam, *Manic 5*, re-named the Daniel Johnson Dam in memory of the late Premier Daniel Johnson, who died while visiting the dam one year earlier.

tober: *Oct. 1-2*, Federal and provincial welfare Ministers met in Victoria; agreement reached to implement many of the recommendations made by study groups, including relating welfare assistance rates to the cost of living and linking job opportunities more closely with welfare programs. *Oct. 2*, A one-megaton thermonuclear device detonated by the U.S. 4,000 ft. underground on the Aleutian Island of Amchitka despite protests from the Soviet Union, Canada and Japan that the explosion might set off an earthquake; no effects were reported. *Oct. 2-3*, Foreign Minister Gromyko of the Soviet Union in Ottawa for talks with Canadian officials, the first visit of a Soviet Foreign Minister to Canada. *Oct. 7*, Diplomatic relations resumed between Canada and Gabon, severed Feb. 19, 1968 when Quebec officials were invited to attend an international Francophone conference on education without first contacting Ottawa. A 16-hour wildcat strike of police and firemen in Montreal, as a result of dissatisfaction with an arbitration board ruling on salary negotiations, caused violence, looting and chaos, two deaths and heavy property damage; the Quebec National Assembly in emergency meeting approved legislation ordering the men back to work Oct. 8; state of emergency declared and aid from the Army, the RCMP and the QPP was requested until Oct. 15; a new one-year contract with the City of Montreal was signed Oct. 30. Samples of moon surface collected by U.S. astronauts and brought to Ottawa for study were put on display by the Geological Survey of Canada. *Oct. 8*, Further evidence of dissatisfaction and tension in Quebec shown by a wildcat strike of about 1,000 Hydro-Quebec employees, a two-hour walkout of employees of the Montreal General Hospital, and grievances of other workers in the public service fields. *Oct. 9*, Federal Government ordered the National Harbours Board and the Board of Grain Commissioners to begin shipping grain through strikebound Pacific ports, bypassing West Coast terminal elevator companies, shipments having been tied up since Sept. 25 when 3,200 members of the International Longshoremen's and Warehousemen's Union went on strike. *Oct. 10*, Death in Monterey, California, of Hon. Robert Henry Winters, former federal Cabinet Minister. 40th session of the Northwest Territories Council adjourned at Baker Lake, District of Keewatin; this was the first session held outside the territorial capital (Yellowknife) in an effort to "bring government to the people". Royal Assent given to an Act reducing the voting age limit for Manitoba provincial elections from 21 to 18 years and providing for election of members of the legislature as young as 18 years. *Oct. 11*, Montreal City administration charged that the Company of Young Canadians had links with groups financed by foreign countries in the Communist bloc and with separatist and subversive activities; further substantiation by the Vice-President of the Quebec Section of the Liberal Federation of Canada. *Oct. 13*, The Soviet Union launched third spaceship, *Soyuz 8*, for the first time putting three manned spacecraft into orbit at the same time; *Soyuz 6* launched Oct. 11 with two men, and *Soyuz 7* on Oct. 12 with three aboard. *Oct. 14*, Settlement of the 75-day strike by 14,500 employees of the Steel Co. of Canada Ltd. in Ontario and Quebec. Agreement between the Federal Government and the Government of New Brunswick announced for the establishment of a new national park about 55 miles north of Moncton, to be called Kouchibouguac. *Oct. 15*, Fisheries and Forestry Minister Davis announced a ban on the hunting of seal pups on Canada's East Coast in 1970; the use of aircraft, including helicopters, was prohibited in the hunting of older seals. Dr. John Everett Robbins of Ottawa, former President of Brandon University, appointed Canada's first Ambassador to the Vatican. *Oct. 16*, Construction of a $4,000,000 container shipping terminal in Saint John, N.B., to be in use by early 1971, announced by New Brunswick Minister of Economic Growth. Presentation to Cardinal Paul-Emile Léger, former Roman Catholic Archbishop of Montreal, of the Royal Bank award of $50,000 and a gold medal for his life of humanitarianism. *Oct. 17*, Strike of West Coast longshoremen, in effect for 23 days, settled with agreement on a two-year contract that was expected to set the pattern for handling containerization problems in most North American ports. *Oct. 21*, Saskatchewan Government announced a program to help farmers enter the livestock business at subsidized rates of interest together with a guarantee to banks of payment of any losses sustained in lending money on livestock enterprises, to come into effect Nov. 1. National Health and Welfare Minister Munro announced a ban on the use of the artificial sweetener cyclamate. *Oct. 22*, 28-month strike of Quebec teachers ended with

agreement on all aspects of teacher-employer responsibilities, salaries, workloads, pensions, teaching aids, promotions and holidays. *Oct. 23*, Explosion in the engineroom of the Canadian destroyer-escort *Kootenay*, during fleet exercises in the eastern Atlantic, killed nine men; caused by a faulty bearing installation. *Oct. 26*, Death in Toronto of J. Frank Willis, veteran radio announcer and actor. Rt. Hon. John G. Diefenbaker installed as Chancellor of the University of Saskatchewan. *Oct. 28*, The 43-year-old Canadian Union of Students announced its dissolution following the withdrawal of support from all but 11 of the 43 universities who were members, due to its radical policies and apathy among the students. The second report of the McRuer Royal Commission inquiry into civil rights in Ontario, established in 1964, tabled in the Legislature; its recommendations included a statutory Bill of Rights for Ontario, appointment of regional government ombudsmen, establishment of machinery to consider complaints regarding maladministration in the government services and to hear appeals against improper court procedures, etc. *Oct. 30*, Dr. Robert B. Salter, surgeon-in-chief of Toronto Hospital for Sick Children, awarded a 1969 Gairdner Foundation award for research on hip deformities, the first award to be made for orthopaedic surgery. *Oct. 31*, Five days of demonstrations against Bill 63, introduced by the Quebec National Assembly, which contained safeguards guaranteeing the right of parents to have their children educated in French or English in Quebec schools.

November: *Nov. 1*, Death in Ottawa of Senator Olive Irvine of Winnipeg, first woman Senator for the Prairie Provinces. *Nov. 3*, Prime Minister Trudeau announced in the House of Commons a 90-p.c. ban on the use of the pesticide DDT (dichlordiphenyltrichlorethane), effective Jan. 1, 1970. External Affairs Minister Sharp announced the closing of Canadian diplomatic missions in seven countries—three in Latin America and one each in Cambodia and Laos, Cyprus and West Berlin—as an economy measure. *Nov. 3–4*, First Conference for the Users of the Great Lakes held in Toronto to discuss pollution problems; arranged by the University of Toronto's Great Lakes Institute, the Ontario Economic Council and the Ontario Water Resources Commission. *Nov. 4*, Report of the task force on Federal Government Information Services tabled in the House of Commons; recommendations included the establishment of an agency to be known as Information Canada to co-ordinate and expand all information programs. Workers at the Algoma Steel Corp., on strike since Aug. 28, voted to return to work following an agreement giving them increased pay and fringe benefits. After two years of negotiations, the first province-wide contract for 70,000 primary and secondary school teachers in Quebec was signed by government and teacher representatives. *Nov. 6*, Following a Federal Government ultimatum that members of the International Longshoremen's and Warehousemen's Union, on strike in Vancouver for six weeks, would be forced back to work by legislation, the members voted to return under their old contract for 90 days until a new committee of negotiators could work out a final settlement. The Federal Government announced a $50,000,000 program to promote language training across Canada, to include grants to the provinces to assist in the costs of educational facilities for minority groups and for second-language teaching in French and English. *Nov. 7*, Federal Government White Paper on Taxation tabled in the House of Commons; it outlined proposals for reform of the income tax structure, including relief to low-income earners, the closing of loopholes and the imposition of a tax on capital gains. Manitoba Government announced a lottery to be held during 1970, its centennial year, bas on the running of Canadian-bred three-year-c horses in the Manitoba Derby July 15, with minimum in prizes of $175,000. *Nov. 8*, T SS *Manhattan*, the first commercial ship to navig the Northwest Passage, ended its 11,000-m polar voyage at Halifax Harbour to pay spec tribute to the captain and crew of the Canadi icebreaker *John A. Macdonald*, which assisted t tanker on its voyage. Five Toronto men se tenced to from 10 to 15 years in jail for the $200,0 kidnapping of Mrs. Mary Nelles of Toron Sept. 7; a sixth was sentenced Feb. 18, 197 *Nov. 10*, Announcement of federal plans to spe $2,000,000 over the next eight years to resto historic sites in Yukon Territory to commemora the Klondike gold rush. *Nov. 12*, Montreal Ci Council passed a by-law permitting it to prohib marches, meetings or demonstrations on publ ground that, in its view, contain threats of violen and providing for 60-day jail terms or $100 fin for persons violating such prohibition. *Nov. 1* The annual Santa Claus parade, sponsored b Eaton's Department Store, cancelled in Montre following the increase in violent demonstration The 128-day strike by 16,000 Sudbury employees Inco ended in a settlement providing for wage an fringe benefits. *Nov. 14–24*, U.S. spacecraft *Apol XII* successfully carried out the second moo flight. *Nov. 17*, Hon. Marcel Cadieux, Unde Secretary of State for External Affairs, award the Outstanding Achievement Award of the Publ Service of Canada for 1969, and the 1969 Vani Gold Medal by the Institute of Public Administra tion of Canada. *Nov. 18*, In a ruling by fiv judges of the Supreme Court of Quebec, a decisio made by a Superior Court judge in September 19 condoning the implementation of the unilingu school program in St. Leonard, was declared t be in error; to avoid disrupting the school yea it was allowed to stand pending the outcome of a action for a permanent injunction before th Superior Court. *Nov. 19*, Canadian Scientif Ship *Hudson* left Halifax on an 11-month researc tour of the Atlantic, Antarctic, Pacific and Arcti Oceans to study ocean currents, continenta shelves, oil prospects, marine biology, food poten tial of ocean waters, etc. *Nov. 20*, Dr. Gerhar Herzberg, retiring Director, Physics Divisio National Research Council, and Carson W. Martin Citizenship Branch, Ontario Department o Provincial Secretary, presented with gold medal of the Professional Institute of the Public Servic of Canada; Dr. Herzberg for his work in the field of pure and applied science and Mr. Martin fo his efforts in the development of programs fo the teaching of English to newcomers in Ontario *Nov. 23*, Three-month strike at Falconbridg Nickel Mines Ltd. ended in a settlement on increas in wages. *Nov. 25–26*, A closed federal-provincia health conference held in Ottawa to study recom mendations of a report on health care in Canad begun in 1968; recommendations included th organization of health services on a regional basis nursing care on an individual basis, quantit buying of drugs and other supplies, etc. *Nov. 27* In a brief presented to the Commons committe inquiring into the activities of the Company o Young Canadians, Lucien Saulnier, Executiv Committee Chairman of the City of Montreal testified that the security of Canada as a whol is being endangered by a revolutionary movemen connected with the CYC. *Nov. 29*, Death nea Ottawa of Dr. Diamond Jenness, age 83, anthro pologist and expert on Canadian Indians an Eskimos, and former Chief of the Anthropology and Archaeology Division of the National Museum of Canada. *Nov. 30*, Ottawa Rough Riders wor the Grey Cup, symbol of Canadian footbal supremacy, for the second consecutive year, by a score of 29–11 over the Saskatchewan Rough riders.

ecember: *Dec. 1,* The Section of the Criminal Code requiring the breathalyzer test for level of alcohol consumption where impaired driving is suspected came into effect. *Dec. 2,* At a conference on the development of the Arctic peoples held in Rouen and Le Havre, France, under the auspices of the French Foundation for Northern Studies, Canada, the United States, Denmark and the Soviet Union agreed to participate in a permanent international secretariat dealing with Eskimo problems. *Dec. 8-10,* Fourth Federal-Provincial Constitutional Conference held in Ottawa; little progress reported. *Dec. 10,* Charles Gagnon, charged with non-capital murder in the May 1966 separatist bombing death of Thérèse Morin, acquitted in Montreal by a Court of Queen's Bench jury. *Dec. 11,* Montreal's anti-demonstration by-law expired; a licence from the city to hold a demonstration is still required. Report of the Royal Commission inquiring into the collapse of Atlantic Acceptance Corp. Ltd. tabled in the Ontario Legislature; recommendations included proposals for separately regulating Ontario's finance companies, modification of provincial laws governing trust companies and improvements in prosecution of perpetrators of commercial fraud. *Dec. 12,* Aircraft carrier HMCS *Bonaventure* retired from the Canadian Navy in ceremonies in Halifax ending 25 years of service. *Dec. 15,* The $12,000,000 Red River Community College in Winnipeg officially opened, an amalgamation and restructuring of the Manitoba Institutes of Technology and Applied Arts. Death in Victoria of Nancy Hodges, retired Senator and the first woman to sit as Speaker of a Provincial Legislative Assembly. *Dec. 17,* The Company of Young Canadians came under close government control under legislation appointing a financial comptroller to prevent misuse of public funds and placing the appointment of all volunteer workers in the hands of the Cabinet. Third report of the Royal Commission on Bilingualism and Biculturalism released; recommendations include adoption of the French-language unit as a basic organizational principle in all federal departments and agencies. Ontario Minister of Lands and Forests announced the development of a 150-acre park on the northeast shore of Lake Simcoe to be named for humorist Stephen Leacock in commemoration of the 100th anniversary of his birth Dec. 30. Alberta Government announced an increase in the hourly minimum wages from $1.25 to $1.40 effective Apr. 1, 1970, and to $1.55 Oct. 1, 1970. Pierre Vallières, former member of the terrorist FLQ, found guilty of manslaughter in connection with the May 1966 bombing death of Thérèse Morin in Montreal. Bank of Canada announced a new series of banknotes on which portraits of former Prime Ministers instead of that of the Queen will appear: on the $5 bill, Sir Wilfrid Laurier; on the $10 bill, Sir John A. Macdonald; on the $50 bill, Rt. Hon. William Lyon Mackenzie King; and on the $100 bill, Sir Robert Borden. *Dec. 19,* Defence Minister Léo Cadieux announced reduction of Canadian reserve armed forces by 4,000 men and the closing of 41 armouries, to take place in 1970. Establishment of commission to consult with representatives of the Indians and study and advise as to claims *re* formal treaties and agreements; Lloyd Barber, Chief Commissioner. Federal announcement of increases in public service pensions ranging up to 42 p.c. for those retired in 1952 and earlier. *Dec. 22,* The lottery-style draw, in effect in Montreal, since Apr. 2, 1968 in an effort to reduce the municipal deficit, ruled illegal by the Supreme Court of Canada under provisions of the Criminal Code; contributions for the December and subsequent draws were returned to senders. *Dec. 23,* Quebec Government announced the establishment of a corporation to run lotteries and races in the province in line with recently passed federal legislation giving provinces responsibility for licensing gambling enterprises; first provincial lottery to be held Mar. 14, 1970. *Dec. 24,* Death in Montreal of Senator Gustave Monette. *Dec. 30,* Annual poll of Canadian women editors voted Judy LaMarsh the most newsworthy woman of the decade; in 1969, in public affairs, Grace MacInnis; sports, Nancy Greene; literature and art, Margaret Laurence; music, Monique Leyrac; stage, screen, radio and television, Geneviève Bujold. Canada's first Laureate of Agriculture awarded to Dr. J. Milton Bell, Saskatoon, for his research on the chemistry of rapeseed products and on animal nutrition; the award was created by H. R. MacMillan, Vancouver, in commemoration of the 100th anniversary of the Ontario Agricultural College, to be presented every five years for significant contribution to Canadian agriculture.

1970

January: *Jan. 1,* The opening of centennial years and the creation of Yellowknife as the first city north of the 60th parallel in Canada marked New Year's Eve celebrations in Manitoba and the Northwest Territories. Fort William and Port Arthur, Ont., officially amalgamated under the name of Thunder Bay; total population 107,000. *Jan. 4,* Canada withdrew from international hockey competition in protest against rules regarding amateur status that did not permit use of the best Canadian players, resulting in world hockey championships, originally scheduled to be held at Montreal and Winnipeg, being held in Stockholm. *Jan. 10,* Patricia Marsden and Lucille Lee, Vancouver, B.C., became the first female Canadian trade commissioners. *Jan. 15,* Appointment of George Maltby, police chief at St. James–Assiniboia, Man., as Manitoba's first ombudsman. P & O liner *Oronsay,* on cruise from London to Hawaii, quarantined at Vancouver following an outbreak of typhoid fever. *Jan. 20,* Federal Government announced allocation of $11,414,000 for Expo 70 at Osaka, Japan. *Jan. 22,* Quebec Government announced a series of increases in the general minimum hourly wage, bringing it to $1.50 by Nov. 1, 1971. *Jan. 23,* Canada pledged $30,000,000 in cash and commodities to the World Food Programme's 1971-72 operations. *Jan. 28,* Manitoba Day observed in Ottawa; Royal Winnipeg Ballet performed at the National Arts Centre climaxing a party staged by the Manitoba Centennial Corporation. *Jan. 29,* Canadian senior women's figure-skating championship won by Karen Magnussen of Vancouver; men's championship won by David McGillivray of Toronto, and the senior pair's by Val and Sandra Bezic of Toronto. Death in Vancouver of artist Lawren Harris, one of the two surviving members of the Group of Seven. *Jan. 30,* The Royal Canadian Academy Medal for distinguished service in the visual arts awarded by Governor General Michener in Ottawa to A. Y. Jackson, the only living member of the Group of Seven, A. J. Casson, a member of the Canadian Group of Painters, and posthumously to Lawren Harris, Franklin Carmichael, Frederick H. Varley, J. E. H. MacDonald and Arthur Lismer.

February: *Feb. 2,* CP Air and Air Canada announced plans to install combustion changers on their aircraft within the next two years to eliminate smoke-trail emission. *Feb. 2-3,* Conference of provincial treasurers with federal Finance Minister Benson took place in Quebec, Que. *Feb. 3,* Canadian-born Lord Thomson of Fleet invested with the Knight Grand Cross of the Order of the British Empire at Buckingham Palace, London, by H. M. Queen Elizabeth; and James G. Campbell, formerly of Springville, N.S., and Montreal, made a Companion of the Order of St. Michael and St. George for services in Guyana. *Feb. 4,* Report of a Commission of Inquiry, established in February 1968, into management and labour practices in the ports of Montreal, Quebec and Trois-Rivières

tabled in the House of Commons; recommendations were made to establish local harbour committees with authority to supervise and discipline employees and enforce collective agreements through on-the-spot arbitration, and to create a permanent planning committee of technical advisers with labour and management representation. Quebec Government ordered a second investigation into the 16-hour strike Oct. 7, 1969, by the Montreal police force. Wrecking of oil tanker *Arrow* owned by Aristotle Onassis of Greece in Chedabucto Bay, N.S., resulted in serious pollution problems. *Feb. 6*, Prime Minister Trudeau announced allocation of $130,000 annually for research facilities for Liberal Members of Parliament; since 1968 the Progressive Conservative Party has received $125,000 annually and the New Democrat and Créditiste Parties, $35,000 each. *Feb. 9*, Judy LaMarsh, former Secretary of State, and her publishers, McClelland and Stewart Ltd. of Toronto, found jointly guilty in libel suit brought by Ed Murphy, former radio reporter in Ottawa; $2,500 damages and court costs awarded to the plaintiff. *Feb. 9–10*, Conference of business and professional leaders with the Prices and Incomes Commission, headed by Chairman Dr. John Young, held in Ottawa in an effort to develop a formula to ensure price restraint and stability. *Feb. 12*, Canada's first successful liver transplant operation took place at Notre Dame Hospital, Montreal; a three-month-old infant was the recipient. Ontario announced plans to establish a 5,000-acre wildlife area on marshland bordering the South Maitland River. *Feb. 14*, Betsy Clifford of Ottawa won the giant slalom at the world Alpine ski championships held at Val Gardena, Italy, and became the youngest competitor to win the gold medal in world or Olympic competition. *Feb. 16*, Interns and resident doctors in Quebec resumed night and weekend duties in 55 hospitals, following their refusal to work such shifts in an effort to obtain higher pay and improved conditions. *Feb. 16–17*, Federal and provincial government leaders conference in Ottawa; agreement reached on anti-inflation measures proposed by the Prices and Incomes Commission, and on the federal ban on phosphates in laundry detergents. *Feb. 23*, The first unit coal train, of 50 cars and three diesel locomotives, carrying 5,000 tons of coking coal from Luscar, Alta., to Vancouver, marked the resurrection of the coal mining industry in that area. *Feb. 25*, Death in Vancouver of Senator J. Wallace de Beque Farris, age 91. *Feb. 28*, Death in Paris of Canadian diplomat and author Graham McInnes.

March: *Mar. 2*, Appointment of Keith Spicer, Toronto, as Canada's first Commissioner of Official Languages, a position set up under the Official Languages Act, 1969. Foreign takeover of Denison Mines Ltd., Canada's largest uranium mining company, blocked by Federal Government. *Mar. 2–3*, H.M. Queen Elizabeth II and H.R.H. Princess Anne stopped in Ottawa and Vancouver en route to a nine-week tour retracing Captain James Cook's voyage across the Pacific 200 years ago from British Columbia's west coast to Australia's Botany Bay. *Mar. 6*, The Brier Cup, symbol of men's Canadian curling championship, won by Winnipeg team skipped by Don Duguid. *Mar. 9–14*, Canada's first Arctic Winter Games held at Yellowknife, N.W.T.; officially opened by Prime Minister Trudeau. *Mar. 14*, Expo 70 officially opened in Osaka, Japan. Eight of ten students from Trinidad and Tobago charged in the Sir George Williams University damage were convicted of conspiracy to obstruct the use of the computer centre and fined a total of $32,500 or jail terms of up to four years, and ordered deported; the remaining two were later fined $1,000 each. *Mar. 17*, Federal scientists confirmed that human blood cells can be injured by doses of cyclamate. *Mar. 18*, Photographs of 19 former governmen leaders in the Senate unveiled in the Centre Bloc of the Parliament Building, witnessed by relative and descendants of the men being honoured Presentation of $15,000 Molson prizes by th Canada Council to Arnold Spohn, Director, Roya Winnipeg Ballet; Jean-Paul Auden, Professor o Philosophy, Université de Montréal, religiou scholar and writer; and Morley Callaghan, Toronto author. A new contract between the Province o Quebec and the Federation of Residents of th Province gave pay increases to the 2,135 intern and residents in 55 hospitals. *Mar. 19*, Announce ment of imposition of stringent federal regulation placing limits on foreign ownership of any produc tive uranium operation in Canada. *Mar. 20* Canada and 18 other countries signed an agreemen to create a Francophone International Co-opera tion Society, an agency for cultural and technolo gical co-operation among French-speaking nations Quebec, Ontario, New Brunswick and Manitoba within the Canadian delegation, signed the found ing charter. *Mar. 24*, Federal Fisheries Service banned commercial fishing on Lake St. Clair and its tributaries, and prohibited on Mar. 31 the sale of pickerel and perch taken from the western portion of Lake Erie, because of mercury contamination; the industries responsible were ordered to take effective action to prevent further pollution. A federal Act compelling car makers to include a number of safety features in new models starting in 1971 received Royal Assent. Rt. Hon. John G. Diefenbaker and Solicitor General George McIlraith celebrated 30 years in Parliament.

April: *Apr. 1*, Northwest Territories Government assumed complete responsibility for governing the Eastern and Upper Arctic regions of the N.W.T., up to this date administered by the Department of Indian Affairs and Northern Development. *Apr. 2*, The federal law making breath tests compulsory for motorists suspected of impaired driving declared null and void in British Columbia by a provincial Supreme Court judge; federal law upheld by the Supreme Court of Canada, June 26. Canada's first organ transplantation research group established in the medical faculty of the University of Alberta; announced by the President of the Medical Research Council and the President of the University. *Apr. 3*, Manitoba Government announced increase of 15 cents an hour to $1.50 in the minimum wage effective Oct. 1; to $1.25 from $1.10 for workers under age 18, and to $1.35 from $1.20 for inexperienced workers. *Apr. 4*, Tuktoyaktuk incorporated as the first hamlet in the Northwest Territories, enabling the local people to govern their own affairs; population 600. *Apr. 7*, The 1970 Conservation Education Award of the American Wildlife Society made to Dr. David A. Munro, then head of the Canadian Wildlife Service, for his book *A Place for Everything*, a work on ecology dealing with the Canadian landscape. *Apr. 8*, Morley Callaghan of Toronto, Canadian author, received the fourth annual Royal Bank of Canada $50,000 award. *Apr. 10*, Ontario announced new regulations on police firearms, binding on all police forces in the province; the use of mace for riot control outlawed. Plans for two new national parks announced, one around Artillery Lake northeast of Yellowknife, the other the 240-mile Trent Canal system in Ontario connecting Lake Ontario and Georgian Bay. *Apr. 11–17*, Mission of U.S. spaceship *Apollo 13* uncompleted as a result of an electrical power problem; returned to earth without landing on the moon. *Apr. 13*, Winners of the 1970 Governor General's Literary Awards for 1969: George Bowering (poetry in English); Michel Brunet (non-fiction in French); Louise Maheux-Forcier (fiction in French); Jean-Guy Pilon (poetry in French); Robert Kroetsch (fiction in English); and Gwendolyn MacEwen (poetry in English). *Apr. 15*, Fourth report

of the Royal Commission on Bilingualism and Biculturalism tabled in the House of Commons; recommendations include adoption by all provinces of anti-discrimination policies, equal conditions for citizenship for all immigrants regardless of country of origin, and languages other than English and French incorporated as options to the school system where demand is sufficient. *Apr. 17*, Full chartered-bank status given to the Quebec Savings Bank, founded in the 1840s, under the name of La Banque Populaire. Defence Minister Léo Cadieux announced the selection of Yellowknife, N.W.T., as permanent headquarters for Canadian military activities in the North, one of the steps being taken to strengthen Canada's military presence north of the 60th parallel. *Apr. 21*, Holding of the 1971 Canada Winter Games awarded to Saskatoon, Sask. Energy, Mines and Resources Minister Greene announced a ban on detergents and cleaning agents that do not meet government phosphate level standards by Aug. 1, 1970, and fines of up to $5,000 a day to manufacturers and importers who do not comply. *Apr. 22*, Federal-provincial agreements signed giving additional federal aid of $41,200,000 to Newfoundland and $32,500,000 to New Brunswick to help overcome regional disparity. *Apr. 25*, Death in Port Colborne, Ont., of Judge Helen A. Kinnear, the first woman King's Counsel and first female county court judge in the Commonwealth. China launched its first satellite, the world's fifth nation to do so. *Apr. 29*, General Election held in Quebec; Liberal Party under Robert Bourassa defeated the Union Nationale government under Jean-Jacques Bertrand; party standing—72 Liberal, 17 Union Nationale, 12 Ralliement Créditiste and 7 Parti Québécois. *Apr. 30*, The first of CP Rail's new computer-commanded coal trains reached Roberts Bank, Vancouver, from the Kaiser mine at Sparwood in the Rocky Mountains.

May: *May 2*, At a meeting of the International Olympic Committee in Amsterdam, Montreal won the right to host the 1976 Summer Olympics, the first time for a Canadian city. *May 10*, Boston Bruins won the Stanley Cup, symbol of hockey supremacy, over St. Louis Blues in the fourth game of the best-of-seven playoff finals. Three-month strike of newspaper employees in Vancouver ended with agreement on a new contract. *May 10-13*, A "One Prairie Province" conference of lawyers, academics and politicians, held at Lethbridge, Alta., to discuss whether the three provinces should unite; conclusions were that politically such a union was unwanted, but that greater co-operation would be advantageous. *May 10-29*, Prime Minister Trudeau visited New Zealand, Australia, Malaysia, Singapore, and Japan where he took part in the Expo 70 Canada Day ceremonies. *May 11*, General Election held in Prince Edward Island; the Liberal government under Premier Alex Campbell returned to power; party standing—27 Liberal and 5 Progressive Conservative. *May 12*, Death in Edmonton of "Matt" Berry, pioneer in Canadian aviation, age 81. Federal and Saskatchewan governments signed cost-sharing agreement for financial assistance of $4,500,000 to assist in the development of the Meadow Lake area. *May 13*, Report of the House of Commons public accounts committee investigating the cost of refitting the aircraft carrier HMCS *Bonaventure* tabled; several senior officials and public servants severely criticized. *May 15*, Mail service in Montreal paralyzed by 5,000 mailmen and inside postal workers attending study sessions; strike vote set for May 19; disruption of service spread across Quebec and Ontario. *May 17*, A 1,500-pipe organ, to be built in Holland over the next 2½ years and installed in the National Arts Centre, presented, in token form, by Dutch-Canadians as formal thanks for Canada's role in the Second World War liberation of Holland; the token, a small six-stop instrument, was already installed. *May 19*, Report of a committee appointed in 1967 to study agricultural problems in Canada tabled in the House of Commons; recommendations included a three-year crop diversion scheme to prevent extension of acreage planted to wheat, and abolition of ineffective subsidies and price supports. *May 19-20*, Postal workers began a series of rotating 24-hour strikes in the face of deadlocked negotiations; efforts of mediator A. W. R. Carrothers, President and Vice-Chancellor of the University of Calgary, collapsed June 2. *May 22*, The CRTC announced new regulations, including the requirement of 50-p.c. Canadian programming throughout the TV broadcast day, including prime time, effective in the fall of 1970 for the CBC and before September 1971 for the private sector. *May 25*, Former Magistrate Frederick J. Bannon of Toronto, whose association with an ex-convict was the subject of a judicial inquiry in 1968, disbarred by the Discipline Committee of the Law Society of Upper Canada. *May 29*, In a ceremony at Government House, the Great Seal of Canada was applied to the Hudson's Bay Company's 300-year-old charter, making the oldest established firm in North America officially Canadian; the head office was transferred to Winnipeg from London, Eng. *May 31*, Canadian dollar unpegged from U.S. $0.925 in effect since May 2, 1962. A strike of 2,500 workers in 54 private hospitals in Quebec in support of a new wage contract began.

June: *June 1*, Soviet Union launched a two-man spacecraft, *Soyuz 9*, into orbit around the earth. Quebec Government announced establishment of a $50,000 reward fund for information about those responsible for five bombings that occurred in Montreal, May 31. *June 2-13*, Federal emergency relief assistance following earthquakes and extensive flooding in Peru, including gift fund, aircraft ferrying service, tents and flour, totalling about $1,000,000. *June 3*, Relief assistance of up to $7,500,000 in food aid offered to Romania to assist in its recovery from disastrous floods. *June 4*, In a meeting with the Prime Minister and Cabinet Ministers, 200 Indians from across Canada rejected the Government's Indian policy presented in the White Paper of June 1969. *June 5-6*, Federal and provincial Finance Ministers at a Winnipeg meeting agreed on limiting inflation, upholding wage restraints and the provision by Ottawa of extra funds for provinces most in need, but challenged federal plans for tax reform. *June 12*, Death in Toronto of J. Keiller Mackay, age 81, former Lieutenant-Governor of Ontario and Justice of the Supreme Court of Ontario. *June 17*, Federal White Paper on unemployment insurance tabled in the House of Commons; proposals include increased coverage to $100 weekly for up to 51 weeks and universal coverage except for self-employed persons. *June 18*, 50th anniversary of the Group of Seven commemorated by opening of an exhibition of 203 of their paintings at the National Gallery in Ottawa; attended by A. Y. Jackson, only living member of the Group. *June 19*, Interim report of the LeDain Commission tabled in the House of Commons. *June 22*, Following a wave of 12 terrorist incidents in Montreal during the past month, four men and two women appeared before a special inquiry for questioning regarding alleged subversive activities after seizure by police of money, dynamite, detonator caps, firearms, etc. *June 24*, Bomb explosion in a Department of National Defence building in Ottawa killing a woman employee. *June 25*, White Paper on foreign policy tabled in the House of Commons; its objectives included the fostering of economic growth, safeguarding of sovereignty, working toward peace and security, promoting social justice, enhancing the quality of life and ensuring environmental harmony, and announced Canada's plan to increase foreign aid allocations. Final volumes

of the Royal Commission on Bilingualism and Biculturalism tabled in the House of Commons. *June 26*, The revised Canada Elections Act lowering the minimum voting age in federal elections to 18 from 21 received Royal Assent; other provisions include the right to place party labels on ballots and the right to vote by proxy in certain instances. *June 30*, Ceremonies took place initiating the Changing of the Guard for the 1970 summer season; for the first time, the guard was composed entirely of students. *June 30-July 1*, Celebration of Manitoba's Centennial began with the arrival in Winnipeg of the Prime Minister and 23 federal Cabinet Ministers.

July: *July 2–15*, H.M. Queen Elizabeth II, H.R.H. the Duke of Edinburgh, H.R.H. Prince Charles and H.R.H. Princess Anne visited Manitoba and the Northwest Territories, taking part in centennial celebrations; H.R.H. Prince Charles was in Ottawa July 3–5. *July 5*, Crash near Toronto of an Air Canada DC-8 en route from Montreal to Los Angeles killed all 108 persons aboard; improper pre-landing procedure later found to be the cause; detailed investigation pending. *July 10*, Quebec Government passed its controversial health insurance Bill, bringing the province into the federal medicare plan. *July 11*, Damage estimated at $2,000,000 caused by hail and wind in area of Viking, Alta. *July 14*, Mountain in the St. Elias Range, Yukon Territory, named Mount Leacock in memory of the Canadian humorist. A Canadian lake freighter, the *Eastcliffe Hall*, loaded with pig iron, sank in the St. Lawrence Seaway near Cornwall, Ont., with the loss of nine lives; the captain later found to be responsible. *July 15–17*, Conference of provincial attorneys general held in Halifax; agreement reached regarding divorce and compensation for victims of violent crime. *July 16–26*, 9th British Commonwealth Games held in Edinburgh, Scotland; nearly 2,000 athletes from 41 nations participated; Canada came third after Australia and England, with 18 gold medals, 24 silver and 2 bronze. *July 22*, Agreement reached in British Columbia's three-month strike in the construction industry following an ultimatum by Labour Minister Peterson forcing return to work under threat of fines and jail terms. *July 26*, Death in Montreal of Rt. Hon. Robert Taschereau, age 73, former Chief Justice of Canada. *July 28*, Public inquiry into the relationship between personnel of the Ontario Provincial Police force and any person or persons of known criminal activity, more specifically with persons alleged to have Mafia connections, begun in Toronto; the report, released Dec. 17, stated that there was no evidence of any improper relationship between OPP personnel and persons of known criminal activity but was critical of the behaviour of several senior officers. The Federal Government directed a reprimand to the Soviet Ambassador stressing the need for observance of international rules governing shipping, pointing to recent incidents involving Canadian and Russian vessels, the latest of which was the sideswiping in fog of a B.C. fishing boat on July 25 by a Soviet vessel off the west coast of Vancouver Island; agreement reached on Oct. 1 under which Soviet vessels would not fish in Big Bank area off the west coast of Vancouver Island in return for use of port facilities. *July 30*, Alberta Government announced establishment of stricter oil pollution standards, effective Nov. 1, including continuous reports on volumes of raw gas and condensate produced at a plant, and installation of automatic closing gates to be activated in the event of a leak.

August: The Ontario Federation of Agriculture and the Ontario Farmers' Union protested against the financing of education through property taxes, by withholding part of their taxes. *Aug. 2*, British Columbia ferry *Queen of Victoria* and Soviet freighter *Sergey Yesinen* collided in Active Pass between the mainland and southern Vancouver Island; three passengers were killed and two injured; the Soviet vessel was placed under formal arrest at Vancouver; public investigation found the pilot of the freighter and the master of the ferry to be equally at fault. *Aug. 2–4*, Conference of provincial Premiers held in Winnipeg with pollution the major topic of discussion. *Aug. 2–9*, Prime Minister Trudeau on tour of the Yukon and Northwest Territories and British Columbia. *Aug. 5*, Federal Government made an extra $100,000,000 available for low-income housing. *Aug. 10*, Following strike-ending legislation passed at an emergency session of the Quebec National Assembly, 40,000 striking construction workers returned to their jobs, union and employer groups to resume negotiations in conjunction with a government-appointed conciliation officer. *Aug. 13*, An ancient burial ground, estimated by archaeologists to be more than 3,000 years old, found in the Grand Lake area of New Brunswick. Automobile insurance in Manitoba came under government jurisdiction; supplementary coverage may continue to be sold by private companies. *Aug. 17*, Architectural Institute of Japan announced that the Canadian pavilion at Expo 70 in Osaka had won the top architectural award. *Aug. 17–20*, Conference of provincial Municipal Affairs Ministers held in Winnipeg; discussions included constitutional reform, pollution, financial matters and a national building code. *Aug. 19*, In a further development in the 11-month postal dispute, Thomas O'Connor of Toronto named mediator. Canada sent $3,540,000 in emergency aid to Pakistan following devastating floods, mainly in food aid. *Aug. 20*, A heavy windstorm caused damage in the Lively, Copper Cliff, Sudbury and Field area of Ontario, killing at least four persons; damage in Sudbury alone estimated at $6,000,000. *Aug. 23*, Federal–Quebec agreement signed creating a national park in the St. Maurice Valley 100 miles northeast of Montreal, known as Mauricie. *Aug. 24*, Saskatchewan Centre of the Arts, centennial project of Regina, officially opened by Governor General Michener. *Aug. 26*, Death in Quebec of Senator Jean-Marie Dessureault, age 81. *Aug. 27*, Controversy in St. Leonard, Que., over the teaching of language in elementary schools ended with assurance that the St. Leonard School Board would allow the children to return to English classes.

September: *Sept. 2*, Agreement reached between negotiators for the British Columbia pulp industry and the workers' unions, some of whom had been on strike since July 24, giving a 22.5-p.c. wage increase in a new contract. *Sept. 3*, The Vanier Medal awarded to Hon. Marcel Cadieux, Under-Secretary of State for External Affairs, for significant contributions to Canada as a public servant. *Sept. 4*, Agreement reached between the Council of Postal Unions and the Federal Government, giving the workers a 55-cent-an-hour wage increase over 21 years, amounting to an average 7.2-p.c. increase. *Sept. 8*, Ten suspended Sir George Williams University students each fined $1,000 for participating in the computer centre "sit-in". General Election in Yukon Territory (see p. 1379). *Sept. 9*, A 100-p.c. ban on the use of pesticide DDT, effective Jan. 1, 1971, announced in Ottawa. Canaport, the first deep-water terminal for supertankers in North America, opened at Mispec Point, N.B., near Saint John. *Sept. 14–15*, Provincial Premiers and Prime Minister Trudeau held closed sessions in Ottawa to discuss the amendment of the British North America Act and financial problems. *Sept. 15*, Voting age in Manitoba elections lowered from 21 to 18. *Sept. 16*, Federal and Saskatchewan Governments approved plans for a $2,000,000 park project on land in southeast Saskatchewan owned by four Indian bands, the Indians to operate the

venture involving rental of land by cottagers. *Sept. 20,* Unmanned Soviet spaceship *Luna XVI* landed on the moon and obtained samples of the lunar surface, loaded them aboard a rocket and fired the missile toward earth. *Sept. 21,* Seventh Annual Review of the Economic Council of Canada released; its major concerns were health and education costs, trade barriers in the U.S. and Europe, the impending acceptance of Britain into the EEC, and Canada's dependency on exports. *Sept. 28,* Death in Cairo, Egypt, of President Gamal Abdel Nasser. *Sept. 30,* Agreement signed between Telesat Canada and Hughes Aircraft Company of California for construction of Canada's first domestic communications satellite.

October: *Oct. 3, Goin' Down the Road* named best Canadian movie of 1970. *Oct. 5,* James Richard Cross, senior British Trade Commissioner in Montreal, kidnapped from his home at gunpoint; the FLQ demanded a $500,000 ransom, a charter flight to freedom for Quebec's most dangerous convicted terrorists and the publication of the FLQ manifesto in exchange for his release; both Federal and Quebec Governments rejected their demands; Mr. Cross was held hostage during nearly two months of negotiations that ended in his release Dec. 3 and in the safe conduct of the kidnappers and some members of their families—seven persons in all—to Cuba. *Oct. 8–18,* Medical specialists in Quebec on strike over the provincial medical care insurance plan ended their protest when fear of violence and "possible emergency medical requirements" followed the political crisis in the province. *Oct. 9,* The British flag was lowered for the last time in Suva, Fiji Islands, marking the end of British rule; H.R.H. Prince Charles represented H.M. Queen Elizabeth II at the ceremonies. *Oct. 10,* Roland Michener Award for meritorious public service in journalism established; to be presented for the first time in 1971. *Oct. 10–18,* Pierre Laporte, Minister of Labour in the Quebec Government, kidnapped by members of the FLQ and held hostage for a week until found dead of strangulation. *Oct. 12,* Combat-trained Army troops left Camp Petawawa for Ottawa to guard Members of Parliament and diplomatic officials. *Oct. 13,* External Affairs Minister Sharp announced in the House of Commons that Canada and People's Republic of China have agreed to establish diplomatic relations; Canadian and Taiwan (Formosa) diplomatic ties severed. General Election in Nova Scotia; Liberals under Gerald Regan defeated Progressive Conservative government under Premier Smith; party standing—23 Liberal, 21 Progressive Conservative and 2 New Democratic Party. *Oct. 15,* Prime Minister Bourassa of Quebec announced that he had asked for armed forces to assure the safety of the people and public buildings; 1,000 officers and men from the 22nd Regiment moved into Montreal. *Oct. 16,* Proclamation of the War Measures Act to deal with the danger of an "apprehended insurrection", violence and other illegal action in the Province of Quebec. Canadian ship CSS *Hudson* returned to Halifax, ending an 11-month circumnavigation of South and North America. *Oct. 22,* Rt. Hon. Lester B. Pearson named first Chairman of the Board of Governors of the Canada-based International Development Research Centre. *Oct. 26,* General Election in New Brunswick; Progressive Conservatives under Richard Hatfield defeated Liberal government under Premier Louis Robichaud; party standing —32 Progressive Conservative, 26 Liberal. *Oct. 30,* Robert Hudon, admitted leading figure in FLQ, received 30 separate sentences for armed robberies and conspiracy to commit holdups to finance FLQ subversive activities, adding up to 25 years.

November: *Nov. 2,* Rewards of up to $75,000 offered jointly by the Federal and Quebec Governments for information leading to the arrest of the "kidnappers or murderers" of Pierre Laporte and for information leading to the arrest of the kidnappers of James R. Cross, and unspecified rewards for information leading to the arrest of Paul Rose, Marc Carbonneau, Jacques Rose, Bernard Lortie and Francis Simard. Federal Government announced further ban on arms sales to South Africa, in line with the UN Security Council's more severe resolution regarding such sales. *Nov. 6,* Bernard Lortie, 19, arrested in Montreal in connection with kidnapping of Pierre Laporte. *Nov. 9,* Death of General Charles de Gaulle, former President of France. *Nov. 11,* Agreement signed between the Quebec Federation of General Practitioners and the provincial government regarding payment of fees under medicare. *Nov. 12,* Quebec's first nuclear power station, located at Gentilly, officially opened; built as a co-operative effort by AECL and Hydro-Quebec. *Nov. 14,* Cyclone and tidal wave in East Pakistan caused deaths officially set at more than 200,000 and unofficially at 500,000. *Nov. 16,* Development loan of $20,000,000 made by Canada to Botswana. *Nov. 17,* Unmanned Soviet spacecraft, *Luna 17,* landed on the moon; vehicle controlled from earth emerged to explore moon surface. Death in Montreal of Bernard Pilon, Liberal MP for Chambly, Que. *Nov. 20,* UN General Assembly voted 51 to 49 to seat the People's Republic of China; Canada voted for the resolution; a previous resolution required approval of two thirds of the Assembly. *Nov. 27,* Dr. J. M. Harrison, Assistant Deputy Minister of the Department of Energy, Mines and Resources, named 1970 winner of the Outstanding Achievement Award of the federal Public Service. *Nov. 28,* Montreal Alouettes won the Grey Cup, symbol of Canadian professional football supremacy, over Calgary Stampeders by a score of 23 to 10 in Toronto. *Nov. 30,* White Paper on income security tabled in the House of Commons; recommended limitation of family allowances on a sliding scale to families with incomes less than $10,000 and an increase in the guaranteed income supplement.

December: *Dec. 1,* The Public Order (Temporary Measures) Act, 1970, replacing the War Measures Act, passed in the House of Commons. *Dec. 2,* Increases announced of 10 p.c. in pensions for disability and death related to military service and of 15 p.c. in veterans allowances, effective Apr. 1, 1971. *Dec. 3,* Royal Assent given to legislation changing the name of the Exchequer Court of Canada to the Federal Court of Canada, making it the main court of appeal in place of the Exchequer Court and extending the jurisdiction of its Trial Division; the number of judges is increased from eight to 12. *Dec. 7,* Report of the Royal Commission on the Status of Women tabled in the House of Commons; major recommendations relate to provision of day-care services for children, abortion on demand in certain circumstances, widespread provision of birth control information, restriction of marriage age to 18 years, relaxation of divorce laws, etc. *Dec. 7–8,* Federal and provincial Finance Ministers met in Ottawa to discuss tax concessions for small businesses. *Dec. 8,* Hon. John P. Robarts announced his resignation as Prime Minister of Ontario, effective after a new provincial Progressive Conservative leader has been chosen. *Dec. 9,* Report of the Senate committee on mass media tabled in the Senate; recommendations include establishment of a press ownership review board, subsidization of promising new journals, scholarships for postgraduate training in journalism, self-improvement in the media, etc. *Dec. 11,* Five Canadian Armed Forces pilots honoured by Peruvian Ambassador for assisting in earthquake disaster relief operations in Peru in June. *Dec. 14,* Salary increases recommended in the Report of the Advisory Committee on Parliamentary Salaries and Expenses. *Dec. 15,* The

ski hill constructed at Saskatoon for the Canada Winter Games officially opened by Nancy Greene Raine. *Dec. 16*, Three-month strike of 23,500 employees of General Motors of Canada settled by award of an immediate increase of 34 cents an hour and compromise on the issue of parity with their U.S. counterparts. *Dec. 17*, Agreement over medicare terms arrived at by the Quebec Government and the Quebec Federation of Medical Specialists. Vol. I of the Report of the Senate Committee on Science Policy released; recommends central planning and co-ordination by efficient government policy-making machinery, emphasis on the life and social sciences, on engineering and development and on economic and social objectives, and government encouragement of research and development by industry. Retirement announced of Dr. Maurice Ollivier, Law Clerk of the House of Commons, after 46 years of service. *Dec. 20*, Death in Ottawa of Arnold D. P. Heeney, Chairman of the Canadian sections of the International Joint Commission and the Canada–U.S. Permanent Joint Board on Defence, former Canadian Ambassador to the United States and Chairman of the Public Service Commission. *Dec. 21*, General Election held in Northwest Territories (see p. 1379). *Dec. 23*, Death in Trois-Rivières of Joseph-Alfred Mongrain, Liberal MP for that constituency. *Dec. 28*, Three suspects in the kidnapping and murder of Pierre Laporte surrendered to police after discovery of their hideout at St. Luc, near Montreal.

APPENDIX I

CONSTITUTION AND GOVERNMENT

Certain information given in Chapter II on Constitution and Government (closed off May 1, 1970) is updated in this Appendix to Dec. 31, 1970. Appointments during that period to the Queen's Privy Council for Canada, the Cabinet and the Senate are included in the Register of Official Appointments at pp. 1343-1344.

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Several changes were made in the Federal Cabinet between May 1, 1970 and Dec. 31, 1970; its composition on the latter date was as follows:—

Prime Minister	Rt. Hon. Pierre Elliott Trudeau
Leader of the Government in the Senate	Hon. Paul Joseph James Martin
Secretary of State for External Affairs	Hon. Mitchell Sharp
Minister of Public Works	Hon. Arthur Laing
President of the Queen's Privy Council for Canada	Hon. Allan Joseph MacEachen
President of the Treasury Board	Hon. Charles Mills Drury
Minister of Finance	Hon. Edgar John Benson
Minister of Industry, Trade and Commerce	Hon. Jean-Luc Pepin
Minister of Regional Economic Expansion	Hon. Jean Marchand
Minister of Energy, Mines and Resources	Hon. John James Greene
Minister without Portfolio	Hon. Joseph Julien Jean-Pierre Côté
Minister of Justice	Hon. John Napier Turner
Minister of Indian Affairs and Northern Development	Hon. Jean Chrétien
Minister of Labour	Hon. Bryce Stuart Mackasey
Minister of National Defence	Hon. Donald Stovel Macdonald
Minister of National Health and Welfare	Hon. John Carr Munro
Secretary of State of Canada	Hon. Gérard Pelletier
Minister of Fisheries and Forestry	Hon. Jack Davis
Minister of Agriculture	Hon. Horace Andrew Olson
Minister of Veterans Affairs	Hon. Jean-Eudes Dubé
Minister of Consumer and Corporate Affairs	Hon. Stanley Ronald Basford
Minister of Transport	Hon. Donald Campbell Jamieson
Minister of Communications	Hon. Eric William Kierans
Minister without Portfolio	Hon. Robert Knight Andras
Minister of Supply and Services	Hon. James Armstrong Richardson
Minister of Manpower and Immigration	Hon. Otto Emil Lang
Minister of National Revenue	Hon. Herb Gray
Minister without Portfolio	Hon. Robert Douglas George Stanbury
Solicitor General of Canada	Hon. Jean-Pierre Goyer.

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In October 1970, the following Parliamentary Secretaries were appointed to serve for 2-month periods:—

Barnett J. Danson	Prime Minister
André Ouellet	Secretary of State for External Affairs
James A. Jerome	President of the Privy Council
Alastair W. Gillespie	President of the Treasury Board
Patrick Mahoney	Minister of Finance
Bruce Howard	Minister of Industry, Trade and Commerce
Martin P. O'Connell	Minister of Regional Economic Expansion
Albert Béchard	Minister of Justice
Judd Buchanan	Minister of Indian Affairs and Northern Development
Ray Perrault	Minister of Labour
Gaston J. Isabelle	Minister of National Health and Welfare
Hugh Faulkner	Secretary of State
Eymard G. Corbin	Minister of Fisheries and Forestry
Marcel Lessard	Minister of Agriculture
Gérard Duquet	Minister of Transport
Charles L. Caccia	Minister of Manpower and Immigration.

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During the period May 1 to Dec. 31, 1970, the following Senators resigned:—

Dessureault, Jean-Marie	Quebec, Que.
Savoie, Calixte F.	Moncton, N.B.
Phillips, Lazarus	Westmount, Que.

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Results of federal by-elections held between May 1, 1970 and Dec. 31, 1970, were:—

Polling Date	*Electoral District*	*Member Elected*	*Member Replaced*
Nov. 16, 1970	Frontenac, Que.	Léopold Corriveau	B. Dumont (resigned Apr. 6, 1970)
Nov. 16, 1970	Labelle, Que.	Maurice Dupras	Hon. L. Cadieux (accepted an office of emolument under the Crown, Sept. 17, 1970)
Nov. 16, 1970	Lisgar, Man.	Jack Murta	G. Muir (died Aug. 26, 1970)

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A General Election was held in Nova Scotia on Oct. 13, 1970, which resulted in a return of 23 Liberals, 21 Progressive Conservatives and 2 New Democrats. Following is the Eighteenth Ministry as at November 1970:—

Office	*Name*
Premier and Chairman, Nova Scotia Power Commission	Hon. Gerald A. Regan
Minister of Finance and Economics and Minister of Education	Hon. Peter M. Nicholson
Minister of Highways and Minister of Public Works	Hon. A. Garnet Brown
Attorney General and Minister of Labour	Hon. Leonard L. Pace
Minister of Lands and Forests, Minister of Fisheries and Minister i/c of administration of Emergency Measures Act	Hon. Benoit Comeau
Minister of Agriculture and Marketing, Minister of Municipal Affairs and Minister i/c of administration of Nova Scotia Liquor Control Act	Hon. J. William Gillis
Minister of Public Welfare, Minister of Mines and Minister i/c of administration of Water Act	Hon. Allan E. Sullivan
Provincial Secretary and Minister of Trade and Industry	Hon. Ralph F. Fiske
Minister of Public Health, Minister i/c of administration of Housing Development Act, and Minister i/c of administration of Human Rights Act	Hon. D. Scott MacNutt

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A General Election was held in New Brunswick on Oct. 26, 1970, which resulted in a return of 32 Progressive Conservatives and 26 Liberals. Following is the Twenty-fourth Ministry as at Nov. 16, 1970:—

Office	*Name*
Premier	Hon. Richard Hatfield
Minister of Agriculture and Rural Development and Minister of Economic Growth	Hon. Edison Stairs
Minister of Education	Hon. Lorne McGuigan
Minister of Finance	Hon. Jean-Maurice Simard
Minister of Fisheries and Environmental Affairs	Hon. William Cockburn
Minister of Health	Hon. Paul Creaghan
Minister of Highways and Minister of Public Works	Hon. J. Stewart Brooks
Minister of Justice	Hon. John B. M. Baxter
Minister of Labour and Provincial Secretary	Hon. Rodman E. Logan
Minister of Municipal Affairs	Hon. Jean-Paul LeBlanc
Minister of Natural Resources	Hon. Wilfred Bishop
Minister of Youth and Welfare	Hon. Brenda Robertson
Minister of Tourism	Hon. J. C. Van Horne
Minister i/c of New Brunswick Electric Power Commission	Hon. George E. McInerney
Minister without Portfolio	Hon. G. Everett Chalmers
Minister without Portfolio	Hon. Cyril B. Sherwood
Minister without Portfolio	Hon. Horace B. Smith

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At a General Election held in the Yukon Territory on Sept. 8, 1970, the following ouncil Members were elected:—

Carmacks-Kluane	Hilda Watson
Dawson	Mike Stutter
Mayo	Ronald A. Rivett
Watson Lake	Donald E. Taylor
Whitehorse East	Norman S. Chamberlist
Whitehorse North	Clive Tanner
Whitehorse West	John Kenneth McKinnon

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A General Election was held in the Northwest Territories on Dec. 21, 1970. The ommissioner, Council and Council staff as at Jan. 29, 1971, were as follows:—

Commissioner	S. M. Hodgson
Deputy Commissioner	J. H. Parker
Members of the Council—	
Appointed	J. H. Parker
	Hugh Campbell
	Louis-Edmond Hamelin
	Leo Gerard Lemieux
Elected—	
Central Arctic	Lena Pedersen
Eastern Arctic	Bryan Pearson
Great Slave North	Jimmy Rabesca
Great Slave South	Paul W. Kaeser
High Arctic	Welland Wilfred Phipps
Keewatin	Willie Adams
Lower Mackenzie	Lyle R. Trimble
Mackenzie Liard	Nick G. Sibbeston
Western Arctic	Tom Butters
Yellowknife	David Searle
Council Staff—	
Clerk	W. H. Remnant
Legal Adviser	F. G. Smith

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On Dec. 9, 1970, a Bill was placed before Parliament relating to the organization of the overnment of Canada, including measures to establish a Department of the Environment; delineate certain duties of the Minister of Energy, Mines and Resources and distinguish tween his duties and those assigned to the Minister of Environment; to place responsibility r astronomical observatories in the National Research Council; to provide for Ministries d Ministers of State; to increase the number of Parliamentary Secretaries from 16 to a mber equal to the number of Ministers holding office; and to provide for a Postmaster eneral.

This Bill had not yet been approved by Parliament at Dec. 31, 1970 nor has it been ssible to include the changes in the Government Organization Chart (dated April 1971) serted facing page 138.

APPENDIX II

VITAL STATISTICS

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The following are 1969 figures for Tables 1 and 2 of the Chapter on Vital Statistics:

1.—Principal Vital Statistics, by Province, 1969

Province or Territory	Live Births		Deaths		Natural Increase[1]		Infant Mortality[2]		Maternal Mortality		Marriages	
	No.	Rate[3]	No.	Rate[3]	No.	Rate[3]	No.	Rate[4]	No.	Rate[5]	No.	Ra
Newfoundland	13,000	25.3	3,005	5.8	9,995	19.5	278	21.4	—	—	4,279	8.
P. E. Island	2,009	18.3	1,007	9.2	1,002	9.1	45	22.4	—	—	868	7.
Nova Scotia	13,618	17.8	6,663	8.7	6,955	9.1	267	19.6	1	0.7	6,568	8.
New Brunswick	11,695	18.7	4,849	7.8	6,846	10.9	221	18.9	3	2.6	5,705	9.
Quebec	95,610	16.0	40,103	6.7	55,507	9.3	1,942	20.3	33	3.5	47,545	7.
Ontario	130,398	17.5	55,707	7.5	74,691	10.0	2,299	17.6	20	1.5	67,150	9.
Manitoba	17,809	18.2	8,040	8.2	9,769	10.0	388	21.8	5	2.8	8,864	9.
Saskatchewan	17,592	18.3	7,492	7.8	10,100	10.5	395	22.5	4	2.3	7,668	8.
Alberta	30,855	19.8	9,921	6.4	20,934	13.4	587	19.0	2	0.6	14,846	9.
British Columbia	35,383	17.1	17,377	8.4	18,006	8.7	641	18.1	9	2.5	18,284	8.
Yukon Territory	462	30.8	95	6.3	367	24.5	18	39.0	—	—	169	11.
Northwest Territories	1,216	38.0	218	6.8	998	31.2	68	55.9	—	—	237	7.
Canada	**369,647**	**17.6**	**154,477**	**7.3**	**215,170**	**10.3**	**7,149**	**19.3**	**77**	**2.1**	**182,183**	**8.**

[1] Excess of births over deaths. [2] Deaths under one year of age. [3] Per 1,000 population. [4] P
1,000 live births. [5] Per 10,000 live births.

2.—Principal Vital Statistics for Incorporated Urban Centres of 20,000 Population or Over,[1] 1969

NOTE.—Birth, death and marriage rates cannot be computed since urban centre populations are not known f
intercensal periods. Urban centres are designated in this table by the following abbreviations: c.=city, t.=tow
vl.= village, b.=borough, s.m.=suburban municipality and d.m.=district municipality.

Province and Urban Centre	Live Births	Deaths	Infant Mortality[2]		Neonatal Mortality[3]		Marriages
	No.	No.	No.	Rate[5]	No.	Rate[5]	No.
Newfoundland—							
Corner Brook, c.	591	117	9	15.2	5	8.5	279
St. John's, c.	1,835	577	28	15.3	22	12.0	959
Prince Edward Island—							
Charlottetown, c.[6]	297	227	8	26.9	6	20.2	199
Nova Scotia—							
Dartmouth, c.	1,315	282	17	12.9	13	9.9	374
Glace Bay, t.	400	213	9	22.5	6	15.0	174
Halifax, c.	2,144	988	45	21.0	32	14.9	1,496
Sydney, c.	535	249	4	7.5	2	3.7	292
New Brunswick—							
Fredericton, c.	452	166	9	19.9	3	6.6	311
Moncton, c.	860	328	11	12.8	7	8.1	541
Saint John, c.	1,716	837	34	19.8	28	16.3	754
Quebec—							
Alma, c.	387	104	12	31.0	11	28.4	215
Anjou, t.	641	164	12	18.7	5	7.8	102
Cap de la Madeleine, c.	437	161	4	9.2	3	6.9	272
Charlesbourg, c.	577	116	6	10.4	3	5.2	159

For footnotes, see end of table, p. 1382.

2.—Principal Vital Statistics for Incorporated Urban Centres of 20,000 Population or Over,[1] 1969—continued

Province and Urban Centre	Live Births	Deaths	Infant Mortality[2]		Neonatal Mortality[3]		Marriages[4]
	No.	No.	No.	Rate[5]	No.	Rate[5]	No.
Quebec—concluded							
Chicoutimi, c.	591	194	20	33.8	14	23.7	337
Côte St. Luc, c.	273	167	2	7.3	1	3.7	61
Dorval, c.	270	113	6	22.2	3	11.1	102
Drummondville, c.	528	275	14	26.5	9	17.0	359
Granby, c.	556	222	14	25.2	10	18.0	357
Hull, c.	1,270	414	35	27.6	29	22.8	505
Jonquière, c.	433	164	5	11.5	4	9.2	327
Lachine, c.	727	321	14	19.3	11	15.1	336
LaSalle, c.	1,458	307	30	20.6	22	15.1	231
Laval, c.	3,292	953	49	14.9	35	10.6	1,031
Longueuil, c.	1,765	473	33	18.7	21	11.9	543
Montreal, c.	19,183	10,514	357	18.6	264	13.8	11,902
Montreal North, c.	1,562	423	36	23.0	25	16.0	443
Mount Royal, t.	175	146	3	17.1	3	17.1	229
Outremont, c.	245	257	7	28.6	5	20.4	143
Pierrefonds, c.	502	77	11	21.9	8	15.9	74
Pointe aux Trembles, c.	530	198	14	26.4	10	18.9	180
Pointe Claire, c.	321	135	2	6.2	2	6.2	228
Quebec, c.	2,543	1,577	65	25.6	44	17.3	1,691
Rimouski, c.	423	147	5	11.8	3	7.1	192
Ste. Foy, c.	1,115	193	16	14.3	12	10.8	442
St. Hyacinthe, c.	354	290	11	31.1	6	16.9	249
St. Jean, c.	502	200	7	13.9	5	10.0	258
St. Jérôme, c.	469	189	7	14.9	6	12.8	321
St. Laurent, t.	906	361	13	14.3	9	9.9	394
St. Léonard, c.	948	148	19	20.0	14	14.8	214
Shawinigan, c.	344	217	6	17.4	4	11.6	302
Sherbrooke, c.	1,469	599	32	21.8	30	20.4	725
Thetford Mines, c.	313	132	5	16.0	3	9.6	217
Trois-Rivières, c.	877	457	16	18.2	15	17.1	474
Valleyfield, c.	533	229	6	11.3	4	7.5	289
Verdun, c.	1,047	701	22	21.0	12	11.5	661
Victoriaville, t.	370	162	7	18.9	6	16.2	196
Westmount, c.	200	253	5	25.0	2	10.0	334
Ontario—							
Barrie, c.	421	205	8	19.0	8	19.0	370
Belleville, c.	506	267	18	35.6	15	29.6	394
Brampton, t.	799	169	14	17.5	11	13.8	357
Brantford, c.	1,024	610	18	17.6	14	13.7	705
Burlington, t.	1,393	344	11	7.9	10	7.2	460
Chatham, c.	726	283	15	20.7	8	11.0	391
Cornwall, c.	664	380	17	25.6	13	19.6	471
Etobicoke, b.	4,118	1,579	53	12.9	42	10.2	1,499
Fort William, c. (pt. Thunder Bay)	905	445	16	17.7	15	16.6	491
Galt, c.	707	281	17	24.0	11	15.6	356
Guelph, c.	1,073	410	14	13.0	10	9.3	576
Hamilton, c.	5,291	2,498	92	17.4	74	14.0	3,048
Kingston, c.	1,039	492	21	20.2	15	14.4	778
Kitchener, c.	2,235	699	40	17.9	32	14.3	1,147
London, c.	3,813	1,682	70	18.4	60	15.7	2,182
Mississauga, t.	2,730	446	38	13.9	23	8.4	577
Niagara Falls, c.	988	435	13	13.2	10	10.1	550
North Bay, c.	839	325	16	19.1	13	15.5	476
Oakville, c.	825	259	21	25.5	11	13.3	498
Orillia, c.	317	233	9	28.4	6	18.9	239
Oshawa, c.	1,719	535	24	14.0	17	9.9	703
Ottawa, c.	4,680	2,434	86	18.4	65	13.9	3,426
Peterborough, c.	866	483	13	15.0	11	12.7	714
Port Arthur, c. (pt. Thunder Bay).	760	468	8	10.5	7	9.2	508
St. Catharines, c.	1,815	762	24	13.2	18	9.9	981
St. Thomas, c.	449	268	8	17.8	7	15.6	317
Sarnia, c.	1,070	414	23	21.5	17	15.9	565
Sault Ste Marie, c.	1,479	455	28	18.9	20	13.5	685
Scarborough, b.	5,087	1,524	71	14.0	58	11.4	1,977
Stratford, c.	309	220	11	35.6	10	32.4	261
Sudbury, c.	1,821	542	33	18.1	28	15.4	940
Timmins, t.	553	272	17	30.7	13	23.5	299

For footnotes, see end of table, p. 1382.

2.—Principal Vital Statistics for Incorporated Urban Centres of 20,000 Population or Over,[1] 1969—concluded

Province and Urban Centre	Live Births	Deaths	Infant Mortality[2]		Neonatal Mortality[3]		Marriages
	No.	No.	No.	Rate[5]	No.	Rate[5]	No.
Ontario—concluded							
Toronto, c.	13,504	6,667	221	16.4	166	12.3	14,162
Vanier City, c.	589	132	13	22.1	9	15.3	195
Waterloo, c.	699	201	19	27.2	12	17.2	317
Welland, c.	718	315	13	18.1	11	15.3	412
Whitby, t.	379	160	4	10.6	3	7.9	202
Windsor, c.	3,631	1,751	87	24.0	73	20.1	2,085
Woodstock, c.	409	229	3	7.3	1	2.4	296
York, b.	3,097	1,022	40	12.9	30	9.7	627
York, East, b.	1,787	891	24	13.4	19	10.6	214
York, North, b.	8,684	2,108	109	12.6	80	9.2	1,895
Manitoba—							
Brandon, c.	493	308	6	12.2	5	10.1	325
Fort Garry, s.m.	374	117	4	10.7	1	2.7	167
Kildonan East, c.	436	181	7	16.1	6	13.8	249
Kildonan West, c.	326	156	5	15.3	4	12.3	91
St. Boniface, c.	836	270	11	13.2	8	9.6	403
St. James-Assiniboia, c.	1,076	358	7	6.5	7	6.5	463
St. Vital, c.	536	198	8	14.9	8	14.9	260
Winnipeg, c.	4,517	2,806	96	21.3	72	15.9	3,484
Saskatchewan—							
Moose Jaw, c.	473	360	7	14.8	5	10.6	360
Prince Albert, c.	573	212	6	10.5	4	7.0	305
Regina, c.	2,713	932	57	21.0	50	18.4	1,352
Saskatoon, c.	2,796	922	46	16.5	38	13.6	1,369
Alberta—							
Calgary, c.	7,617	2,195	131	17.2	106	13.9	3,963
Edmonton, c.	8,810	2,267	139	15.8	105	11.9	4,797
Lethbridge, c.	652	333	10	15.3	8	12.3	466
Medicine Hat, c.	419	266	14	33.4	10	23.9	352
Red Deer, c.	495	153	6	12.1	3	6.1	385
British Columbia—							
Burnaby, d.m.	2,001	907	33	16.5	24	12.0	837
Chilliwhack, d.m.	355	160	4	11.3	4	11.3	161
Coquitlam, d.m.	858	188	14	16.3	12	14.0	194
Delta, d.m.	765	175	12	15.7	8	10.5	138
Kamloops, c.	542	182	7	12.9	5	9.2	410
New Westminster, c.	712	454	15	21.1	13	18.3	1,008
North Vancouver, c.	566	294	9	15.9	5	8.8	364
North Vancouver, d.m.	837	246	13	15.5	8	9.6	264
Prince George, c.	860	120	8	9.3	6	7.0	455
Richmond, d.m.	898	270	22	24.5	15	16.7	336
Saanich, d.m.	802	534	11	13.7	6	7.5	375
Surrey, d.m.	1,698	734	31	18.3	23	13.5	447
Vancouver, c.	6,357	5,047	91	14.3	66	10.4	5,207
Victoria, c.	769	1,025	20	26.0	13	16.9	1,022
West Vancouver, d.m.	369	312	4	10.8	4	10.8	346

[1] As at the date of the 1966 Census: residents only. [2] Deaths under one year of age. [3] Deaths under 28 days. [4] By place of occurrence. [5] Per 1,000 live births. [6] Population fewer than 20,000 at date of 1966 Census but included as the largest urban centre in Prince Edward Island.

APPENDIX III

INCOME SECURITY AND VETERANS PENSIONS AND ALLOWANCES

GES 374, 378 AND 383

A White Paper on Income Security for Canadians was tabled in Parliament on Nov. 1970, proposing a shift of Federal Government direct payments more in favour of people need. The paper deals with income security programs for dependent children and aged sons, the Canada Pension Plan and the Canada Assistance Plan, and also summarizes proposals presented in the White Paper on Unemployment Insurance. All the recommendations in this White Paper had not been approved by Parliament by Dec. 31, 1970 e closing date for this volume) but since, if approved, they will change considerably the ormation under the headings on pp. 374, 378, 383 and 404, they are summarized in the owing paragraphs.

Family Income Security Plan.—The existing Family Allowances program is to be laced by a Family Income Security Plan expected to be effective in September 1971. der the FISP, children up to age 16 in families with annual family incomes (husband and e) of $4,500 or less will get $16 per month per child. The $16 monthly benefit will be dually reduced as incomes rise until a benefit of $5 monthly is payable with respect to h child in families with annual family incomes of up to $10,000. The benefit is to be minated for children in families whose incomes exceed $10,000. No change is proposed the Youth Allowances program but it is hoped that it can be integrated with the new SP.

Guaranteed Income Supplement and Old Age Security.—Beginning January 1, the basic Old Age Security pension is to be a flat $80 a month. In April 1971, the aranteed Income Supplement is to be increased to $55 monthly for a single person and $95 a month for a two pensioner couple. These increases in GIS will ensure that no alified single person has income from all sources of less than $135 a month, and no qualitwo pensioner family less than $255 a month. OAS pensioners who qualify for GIS be entitled to annual escalations ranging from 1 p.c. and up to a maximum of 2 p.c. on combined total to reflect price rises. Legislation has now been passed by Parliament bring the new program into effect.

Canada Pension Plan.—Changes in the Canada Pension Plan cannot be effective il January 1973, because three years notice must be given to the provinces before major nges can be made in the Plan.

A number of changes are proposed for the Canada Pension Plan. The major changes te to increasing the earnings ceiling so as to improve future pensions, improving the el of benefits for disabled contributors and widows and to introducing a new benefit for wife of a disabled contributor.

It is proposed to increase the ceilings on pensionable earnings in annual stages from the 00 it will be in 1972 to $6,300 in 1973, $7,100 in 1974, and $7,800 in 1975.

With respect to the benefit for a disabled contributor, it is proposed that the pension ncreased effective January 1973 so that the flat rate portion would be raised from $27 onth to $80 a month and the percentage component increased from 75 p.c. to 100 p.c. he imputed value of the retirement pension, the total reduced by the amount received er Old Age Security at age 65.

With respect to the widow's pension under age 65, it is proposed to increase the flat rate ion from $27 a month to $80 a month and the percentage component from 37½ p.c. to .c. of her late husband's actual or imputed retirement pension. For widows age 65 or e, the pension is also to be set at $80 plus 75 p.c. (rather than the present 60 p.c.) of late husband's retirement pension, less the amount of the OAS pension.

A new benefit of $80 a month is proposed for the wife of a disabled pensioner if she under age 65 and has dependent children in her care.

It is also proposed to fix the basic exemption for a year at the current level of $600; retain $800 as the lower limit for determining contributory status of self-employed perso to continue (rather than discontinue as at present) benefits for the children of disabl contributors when the contributor reaches age 65; and to review the earnings test retired pensioners in the 65-69 age group.

Canada Assistance Plan.—The Federal Government supports provincial soc assistance through the Canada Assistance Plan under which it contributes one half of t costs. Discussions with the provinces will be held to try to overcome many of the ina quacies of social assistance by resolving a number of major issues such as entitlement assistance, incentives, adequacy of assistance, appeals, communication and informati administration, cost-sharing arrangements, welfare and community development servic work activity projects, and the relationship of social assistance to welfare and manpow programs.

The Federal Government also proposes to give notice to the provinces of its intenti to discontinue its cost-sharing agreements under the Old Age Assistance Act, the Blind P sons Allowances Act, the Disabled Persons Allowances Act and the Unemployment Assi ance Act. The Canada Assistance Plan would then be the only instrument for shari social assistance costs with the provinces.

Unemployment Insurance.—Major changes proposed in the Unemployment I surance program include the extension of coverage, reduction in the qualifying contributo period, improvements in the amount of benefits and the introduction of special benefits be paid on retirement and for unemployment due to sickness and maternity. The Feder Government will no longer contribute to administrative costs, which will be met by e ployers and employees, but it will pay for benefits due to a higher rate of national or region unemployment. For the first time in Canada, experience rating will be used to determi contributions by large employers.

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On Dec. 2, 1970, the Minister of Veterans Affairs announced in the House of Commo increases of 10 p.c. in pensions for disability and death related to military service and 15 p.c. in the maximum allowances paid under the War Veterans Allowance Act, bo effective Apr. 1, 1971. The announcement also included increases in the War Veter Allowances income ceilings by amounts equivalent to the dollar value of the rate increas and a statement to the effect that pensions and allowances, paid under the Civilian W Pensions and Allowances Act, will be aligned with those of the Pensions Act and the W Veterans Allowance Act.

On the same day, the Minister moved First Reading of a Bill to amend the Pensi Act to incorporate therein most of the proposals of the Government's White Paper Veterans Pensions, released Sept. 9, 1969, and the recommendations in the Report of t Standing Committee on Veterans Affairs, released June 9, 1970.

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